



Railway Age

Vol. 85. September 1, 1928 No. 9



"The Twentieth Century Limited" along the Hudson River

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Why

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Railway Age

Vol. 85, No. 9

September 1, 1928

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Motor Coach Competition Increasingly Serious

LONG-DISTANCE motor coach lines are growing with astonishing rapidity. They cannot compete with the railroads from a standpoint of either speed or comfort; yet, because of lower rates and the persistent preference of some people for highway travel, they continue to grow. The necessity for the establishment of a federal policy regarding the regulation of interstate motor coach operation thus becomes more and more pressing. If these carriers are to be forever permitted to start operation when and where they please, regardless of the adequacy of railroad service, then such a policy ought at least be honestly announced. The railroads are entitled to know where they stand. To be sure, a *laissez faire* policy is not justified. Disregarding the questionable governmental ethics of regulating one industry and leaving its competitors untrammelled, the selfish interests of the public demand some protection to secure the maintenance of adequate railroad service. Is the seriousness of this situation adequately appreciated by all railroad men? Every man who gains his livelihood from railroad service, from track laborer to the highest executive, should be a committee of one to present the facts in this case to the public. Now that an election is in the offing, it ought not to be difficult to secure promises of legislative support for a reasonable program looking toward highway transport regulation, provided those whose interests are at stake adequately press their case.

A Goal for Railroad Cost Accounting

THE ultimate in cost accounting as applied to railroads apparently would be to have transportation charges based on "cost plus". Here is how it might be accomplished: Abolish all present rates, both freight and passenger. When a passenger traveled from, say, Chicago to Washington, he would not know when he got on the train how much he would have to pay. That would introduce an element of uncertainty which should prove intriguing to some. The fare would vary, depending on various factors making up the actual cost of transporting the passenger to his destination, such as whether the car he occupied were new or old or had been freshly painted, the number of passengers in the car, the standard of track maintenance on each mile of line traversed, etc. On his arrival at destination the actual cost of transporting the passenger would be computed and the charge made accordingly. The same

principle could also be applied to freight transportation. Aside from its appeal to the sporting instinct, this plan would have the further advantage that, by the additional clerical forces it would require, it would probably solve the unemployment problem in the United States for all time. Those who are handicapped with a knowledge of the facts might point out that the theory of cost accounting is one thing, while its practical application is something else. The effective procedure, apparently, in promoting the opinion that the railroads ought to adopt an industrial type of cost accounting, is to concentrate attention on the theory and disregard the practical conditions which would surround its application.

Locomotive Drafting Tests

THE simplicity, reliability and effectiveness of the common method of drafting locomotives by utilizing cylinder exhaust to create a partial vacuum in the smokebox has been amply demonstrated, and explains why this relatively inefficient method of creating draft has persisted so long. With the increasing price of locomotive fuel, however, the urge for fuel economy has caused both mechanical and operating officers to direct more careful scrutiny toward fuel wastes of all kinds, including the 450 horsepower, more or less, which, under certain conditions, escapes through the stack of the modern heavy locomotive. After an extensive series of tests during the last three years with varying front-end arrangements on all classes of power, the Missouri Pacific reached the conclusion that its former standard front-end arrangement was, to an unnecessary extent, wasteful of power and fuel, because the proportions specified for the stack, petticoat pipe, exhaust pipe, table plate, etc., require a highly restricted nozzle tip in order that the locomotives may make sufficient steam. Moreover, the front-end arrangement of similar locomotives in the same class of service was found to differ greatly, indicating anything but a satisfactory condition as regards this important locomotive detail. In general, the changes found necessary by the tests mentioned were: (1) To provide a larger stack, with interior extension reaching almost to the center line of the smokebox and entirely displacing the petticoat pipe; (2) to install a new design of exhaust pipe, affording a larger area at the nozzle and having an area at the base at least as large as the exhaust passages in the cylinder saddle; (3) to substitute a netting table plate for a solid plate in attempting to secure a higher degree of superheat; (4) in certain cases to use four short diamond projections over the nozzle opening. The redesigned front-end arrangement has proved to be

self-cleaning, filling the stack well under all conditions, elevating the smoke satisfactorily, giving a good steaming locomotive, and a more powerful one owing to improved steaming qualities and substantially reduced back pressure. In fact, it has proved practicable to increase the tonnage ratings somewhat on locomotives having the revised front-end arrangement. If any other evidence were necessary to prove the need for closer attention to and study of front-end arrangements, it is afforded by the frequent lack of uniformity of front-end details in locomotives of the same class in the same service. The inability of locomotive boilers to make steam is often due to other causes than an improper front-end arrangement, but in the attempt to overcome the difficulty, unauthorized front-end changes are made, practically always consisting of reductions in the size of the nozzle opening, with resultant increase of back pressure and a loss of power. The experience of the Missouri Pacific suggests that an extensive check of front-end arrangement may do much to bring about better fuel economy and improved locomotive operation.

Eliminating Switch Lamps in Automatic Signal Territory

WHERE main-line switches are located near automatic signals there is always a possibility that the switch light may be mistaken for a clear signal indication at night. In view of the fact that the position of the switch is checked within 3/16 in. by the circuit controller on the switch, in connection with the automatic signals, whereas the switch can be open an inch or more before the ordinary switch lamp will indicate danger, it has been the experience of several roads that the best way to eliminate confusion on the part of engineers, as well as to check the position of the switch, is to remove the switch lamp and depend on the signal alone to indicate the position of the switch. An additional consideration is the fact that the maintenance and operating cost of an oil switch lamp is eliminated. For over 15 years the Southern has had in effect a rule reading substantially, as follows: "Unless otherwise provided, in automatic block signal territory, lights will not be maintained on trailing point switches, nor on facing point switches which are not more than 500 ft. beyond a signal." On the Denver & Rio Grande Western the same rule is in force except that the limit for facing switches is reduced to 250 ft. On the Seaboard Air Line the switch lights in automatic territory are eliminated on all main-line switches within 300 ft. of an automatic signal. On the Southern Pacific lamps are eliminated on all facing switches which are protected by automatic signals located not more than 250 ft. therefrom. In contrast, the Great Northern, which removed certain switch lamps in automatic territory several years ago, later replaced these lamps, the principal objection to their absence being their experience that a conductor could not check whether a brakeman had closed the switch behind a train. This shows that there are two opinions on this question. The evidence at

hand indicates, however, that the majority of the roads that have eliminated switch lamps adjacent to signals in automatic territory have found the benefits derived thereby to outweigh the disadvantages.

Unique Pension Plan

THE railroads have given much thought and study in recent years to the problem of providing satisfactory old-age pension and retirement plans. That this is a complicated and difficult question was clearly indicated in the series of editorials that have recently appeared in these pages. An interesting result of some of this thinking is a pension plan now being proposed for the employees of the Louisville & Nashville, which has had a pension plan in effect since 1901.

The executive pension committee of the Louisville & Nashville Veterans' Club, with the assistance of the Inter-Southern Life Insurance Company and Dr. Donald Campbell, a pension actuary, now recommends a contributory plan, to which the employees of the railroad are asked to subscribe. Roughly, it is proposed to pay a pension of one per cent of the average earnings for the last 10 years of service, multiplied by the number of years of service, the pensions to be payable upon retirement at the age of 65, except in cases of total and permanent disability before that age. It is not necessary, however, that the employee retire at this age unless he so wishes, or it is in the interests of the railroad to dispense with his services. If 15,000 of the employees subscribe to the plan before the first of October, next, it will become effective for employees who leave the service after May 1, 1929. For those who reach the retirement age and leave the service before that date the regular pension of \$10. per month will be paid, according to the present practice.

Since many of the employees who will qualify for pension privileges, if the plan becomes effective, have already been in service a considerable number of years, the problem of making some arrangement to cover the liabilities already incurred is a troublesome one. It is apparent that the railroad company will have to make heavy appropriations, now, or as the individual employees eventually retire, to overcome this deferred liability. The older employees, however, will participate in meeting this liability, at least to a certain extent. For instance, if an employee on October 1 is 50 years of age, or under, he will, if he retires at 65, receive a pension of one per cent of his average salary per month for the last 10 years of service, multiplied by the number of years of service, except that it will not be less than \$25 or more than \$100 per month. His payments to the fund will be two per cent of his earnings, except that \$400 per month is the maximum amount of salary that can be assessed. If he is over 51 years of age when the plan becomes effective, the percentage of the assessment will increase from 2½, between the ages of 51 and 59 years, to three per cent for 60 to 62 years, inclusive; and four per cent for the ages of 63 and 64 years.

If an employee should leave the service before he is 55,

he will under certain conditions be refunded an amount equal to 60 per cent of that paid into the fund after the second year of membership. Under certain conditions, also, an employee is entitled to a pension if he leaves the service between the ages of 55 and 65.

If this plan is adopted it will mark the first contributory and contractual plan made effective on a large railroad in this country. The contract is between the employees and the insurance company. That the railroad participates to a very considerable extent, however, is indicated by the statement in a folder which has been given to the employees, that "the premiums required by any life insurance company for such a service would be very greatly in excess of the deposits you will be required to make under this plan".

If the plan should become effective, it will undoubtedly be followed with keen interest by the railroad world; indeed, it may mark the beginning of a tendency on the part of the railroads toward a combination of the pension plan contributory and contractual features which have already received a certain degree of recognition by some of the industries.

"Competition"—with the Main Competitor Hog-Tied

THERE are railroads here and there that are doing unusually well because of especially favorable conditions, but the railroad industry as a whole is not doing well. The return being earned by it is running at the lowest annual rate since 1922. Among the causes are reductions of rates and advances in wages. It is due also, however, to the diversion of traffic from the railways to other means of transportation. If their freight business had increased within recent years at anything approaching the same rate as before the war, and if their passenger business had increased instead of greatly declining, the industry would now be earning enough net return to warrant reductions of rates in some territories.

The present situation and present tendencies in the railroad industry are due to a combination of influences to which no other large industry in the United States is being subjected. First, the railroads are the only means of transportation which is dependent entirely upon its own earnings for the wherewithal with which to render its service. Every other means of transportation, whether by water, highway or air, is being directly or indirectly subsidized by the government. Secondly, the railroads are the only transportation agencies which are so regulated as to prevent them from competing in rate making with their competitors, and as to even compel them to so cooperate with some of their competitors as to divert traffic to the latter.

All highways and waterways are provided and maintained by the government. There is no direct relationship between what the operator of a motor coach or truck must pay for the use of a government-built and maintained highway and what it costs the tax payers

to have him use it. Likewise the Panama canal and other improved waterways are provided at government expense. When tolls are charged for their use they are usually inadequate, and usually no tolls are charged at all.

All Free But the Railways

Before the adoption of effective regulation of railway rates, competition by highway was hardly a factor and the railways so adjusted their rates as to meet the competition of water carriers of almost all kinds. We have recently seen in print repeatedly the suggestion that the railways should reduce their passenger fares to help them meet the competition of motor vehicles on the highways. Probably they would not be allowed to reduce their fares to meet highway competition unless they correspondingly reduced their fares upon business that was not subject to such competition, and this they could not afford to do. On the other hand, the companies operating motor coaches on the highways in competition with them usually are free to make their rates as they choose. For example, after the new highway was opened between Kansas City and St. Louis through motor coach service was installed at a rate about 25 per cent less than the railway rate. Soon afterward another motor coach line started operation with a through rate less than half as great as that of the railways and about 30 percent less than that of the motor coach line which previously was in the field.

Formerly it was the general practice of the railways to make their rates lower for longer than for shorter hauls if necessary to meet competition. The number of cases in which they are still allowed to do this is constantly becoming smaller. More and more their freight rates are being put on a distance basis regardless of water competition. The most important example is afforded by the persistent refusal of the Interstate Commerce Commission to let them make lower rates to the Pacific Coast, for the purpose of meeting water competition, than to intermediate points. In the Mississippi Valley the government is actually operating a barge line in competition with them, and not only prohibiting them from making rates especially to meet this competition, but requiring them to establish rates and routings for the purpose of strengthening it.

Effects of One-Sided Competition

The effects of the government's policy of subsidizing competition with the railways, leaving their competitors free to make any rates they like, preventing the railways from retaliating upon their competitors and keeping railway rates in general upon an unremunerative basis, are becoming apparent. Nor are the effects confined to the railroad industry. The diversion of traffic from the railways is a very important reason why their traffic is not growing as formerly, and to this as well as to increased efficiency of operation, is due a great reduction that has occurred in railroad purchases of certain kinds. The railways are now acquiring fewer new locomotives and freight cars than in years. In the first seven months of the last three years the numbers of locomotives placed in service were, 1926, 1280;

1927, 1195; 1928, 881. The numbers of unfilled orders for locomotives ordered by the railways but undelivered on August 1 of the last three years were, 1926, 517; 1927, 209; 1928, 73. In the first seven months of the last three years the numbers of freight cars placed in service were, 1926, 60,713; 1927, 41,806; 1928, 35,854. The numbers of unfilled orders for freight cars outstanding on August 1 of the last three years were, 1926, 27,995; 1927, 18,303; 1928, 14,830. There is a large industry devoted almost exclusively to the manufacture of locomotives and cars and the special devices used on them. Because of the small orders it has been receiving from the railways it is in a very unsatisfactory condition. It has been obliged, of course, to reduce its own employment of labor and its purchases from other industries; and if all the adverse effects upon general business that have been produced by reduction of railway purchases of equipment could be traced, it would be found they have been felt in many branches of business.

Another effect of great importance which is being produced by the diversion of traffic from the railways is that of necessitating the charging of higher rates than would otherwise be necessary upon their remaining traffic. It is remarkable how little consideration business men give to this in their advocacy and promotion of means of diverting traffic from the railways, but here and there evidence appears that some persons outside the railroad business realize that the diversion of traffic to waterways may not be an unmixed blessing. Grand Island, Neb., is not located on any of the waterways that it is proposed to develop. The Grand Island Independent recently published an editorial entitled "Pulling for a Higher Tax" in which it strongly opposed extensive development of inland waterways and contended that insofar as it was successful in diverting traffic from the railways it would tend to maintain or increase the freight rates that must be paid by communities not located on waterways. "The politicians," it says, "are pulling at the Missouri river navigation project, with its expenditure of millions upon millions of the taxpayers' money, in an appeal for votes. The economists, the practical rate experts of all the interior cities from the Dakotas to Texas, are pulling in exactly the other direction." The Grand Island Independent quotes R. O. Springer, rate commissioner of the Sioux

Falls (S. D.) Chamber of Commerce as saying in reference to the Missouri river improvement project: "It is laughable to see both parties pledged to the policy of keeping the government out of business and at the same time promising to put it still further into business." But those who are primarily to blame are not the politicians but business men throughout the country who profess to be opposed to "government in business," who claim they want the railways to continue to render good service, and to earn enough to render it, and who at the same time support the most extravagant projects for more "government in business" with total disregard of the probable effects upon the railroad industry and upon the service the railways can render.

An Unfair and Unsound Policy

The gross unfairness and economic unsoundness of the government subsidizing competition with the railways and even engaging in competition with them itself, while manacled them with restrictive regulation which makes it impossible for them to defend themselves, ought to be apparent to everybody. The country is still dependent upon the railways for much the greater part of its transportation service, and will be for years to come. Therefore, the kind of transportation it will get will depend mainly upon the condition of the railways, and that will depend mainly upon their earnings. The present policy of railway regulation was adopted upon the assumption that transportation was largely a non-competitive industry and that the railways must be controlled to prevent them from treating the public unfairly. Direct and indirect government subsidizing of other means of transportation has made transportation one of the most highly competitive industries in the country. The railways would be able to hold most of the available traffic if they were as free as their competitors are to adjust their service and rates in accordance with conditions. They would be better able to stand the present rigid and restrictive policy of regulation if they were not being subjected on every hand to unfair competition. There are many indications that they cannot long stand the public's present policy of promoting all kinds of competition with them at the tax payer's expense and at the same time keeping them hog-tied so that they cannot compete with their competitors.

* * * *



B. & O. Locomotives at Cumberland, Md.

Ironing Out a Mountain Railway

D. & R. G. W. eliminates more than ten complete circles of curvature and reduces maximum curves from 12 degrees to 6



Above—Original Alinement at Windy Point in Colorado River Canyon. At Right—Same Location After Revision



THE present year will witness the completion of a program of rehabilitation on the Denver

& Rio Grande Western main line between Denver, Colo., and Ogden, Utah, 782 miles, which was inaugurated in 1925, and which is resulting in the elimination of 156 curves and 3,713 deg. of central angle, together with the easing of the remaining curves, with a very few exceptions, to a maximum of 6 deg., instead of the many curves of 10 deg. and 12 deg. which formerly existed. This work has been carried on concurrently with the complete rehabilitation of the roadbed, track and bridges, to the end that traffic can be handled more efficiently and expeditiously than has been possible heretofore. The improvement in alinement was not achieved by relocation, as the term is generally used to imply the construction of a new line in an entirely new location, but was made at a comparatively small expenditure by the careful and painstaking revision of the existing line, much of which is located in narrow mountain canyons and passes, where considerable curvature is inevitable.

The reductions in curvature, both in central angle and degree of curve, have not only eliminated speed restrictions at many points and permitted increases in allowable speeds at more than a score of others, but have made a material reduction in the curve resistance of the line as a whole. In addition, safety has been increased in many places by moving the line away from the cliffs, which tower 500 to 1000 ft. above the track, thus avoiding the hazards of falling stones and dispensing with the services of many watchmen who were formerly maintained at such places. On the western approach to Tennessee pass, advantage was taken of the curve reduction work to eliminate some adverse grade in the westbound main track, and west of Princeton, Colo., on the eastern approach to Tennessee pass, the grade on

the new location was raised 27 ft. above the old track to reduce quantities and to give a slack grade through Yale. Near Woodside, Utah, and Verde, line changes were made primarily to avoid troubles from washouts, although in each case the maximum curvature was reduced from 6 deg. to 3 deg. 20 min., with reductions in central angle. Near Verde, the line was thrown to higher ground and this, with channel changes, eliminated four bridges over Grassy Trail creek, where washouts in 1925 tied up the line for 10 days. In all new work, spirals were used on curves sharper than 2 deg. Complete data on the work done at the various locations are shown in the accompanying tabulation.

This work has involved the relocation of 143 miles of main line and has included the elimination of 27 curves in the Grand canyon of the Arkansas, 47 in Brown canyon and near Yale on the eastern approach to Tennessee Pass, 8 in the Eagle River canyon on the west approach to Tennessee Pass, 26 in the Colorado River canyon west of Minturn and 19 in Ruby canyon near the Colorado-Utah line. These changes have involved the moving of 3,953,000 cu. yd. of material, nearly half of which has been rock.

Major Projects in Line Revision

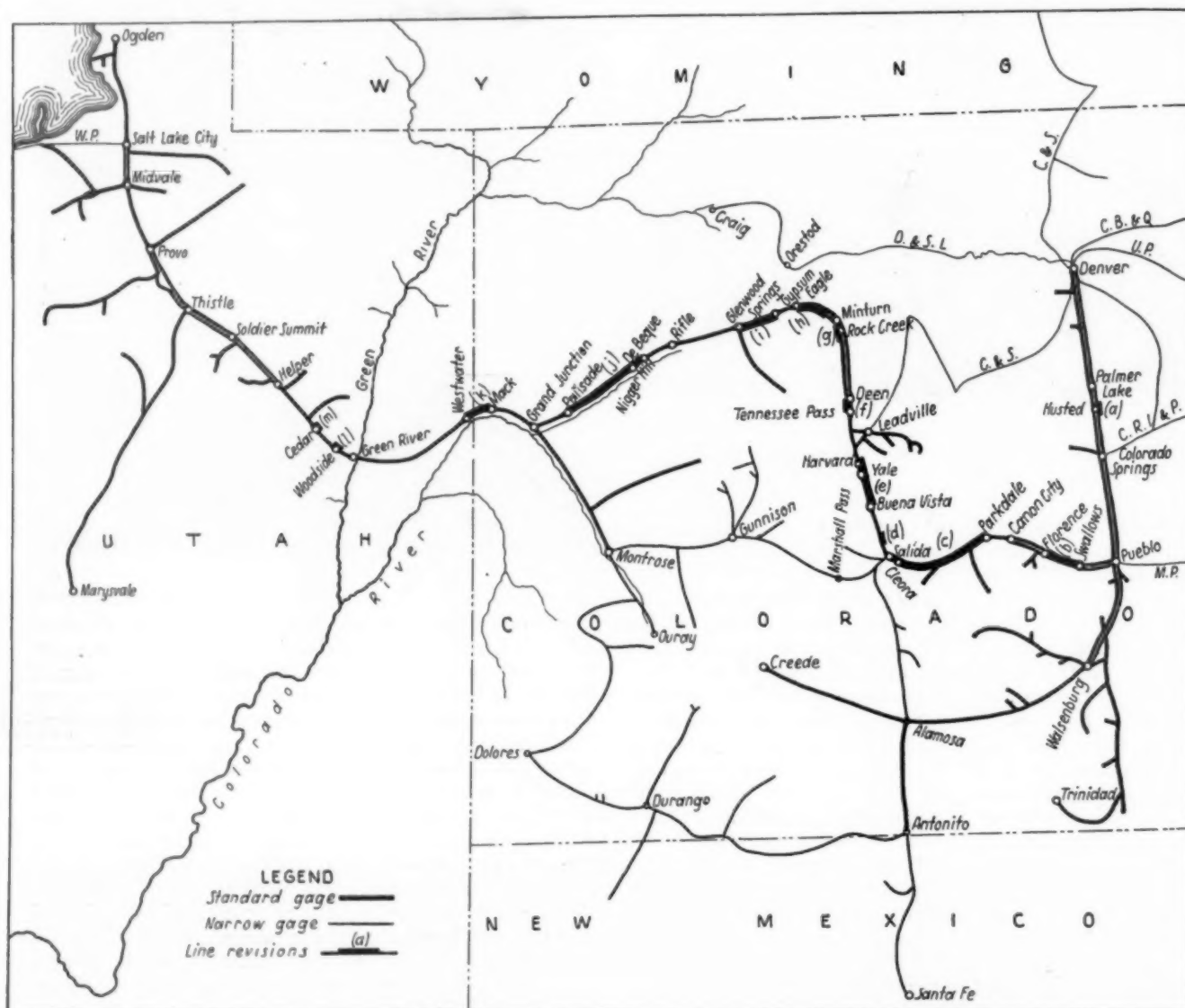
Among the larger line revision projects are those along the Arkansas river between Swallows and Florence, in the Royal Gorge between Parkdale and Cleora, in Brown canyon west of Salida, and between Buena Vista and Harvard, on the eastern approach to Tennessee Pass. Other heavy work was encountered along the Eagle and Colorado rivers between Minturn and Glenwood Springs, as well as along the Colorado river

between Rifle and Palisade, and in Ruby canyon between Mack, Colo., and Westwater, Utah.

Work is now in progress on the line between Swallows and Florence, 14.81 miles, where numerous curves ranging from 6 deg. to 9 deg. are being reduced to a maximum of 4 deg., 20 curves out of a total of 50 will be eliminated, and a reduction of 350 deg. will be made in the central angle.

From Parkdale to Cleora, 40 miles, the line extends through the canyon of the Arkansas river, westerly from the Royal Gorge. The old line was particularly crooked through this stretch as will be seen from the

In Brown canyon, including the work to be done during the current year, 12 curves ranging from 6 deg. to 10 deg. 33 min., are being eliminated, the maximum degree of curve is being reduced to 6 deg. and the central angle is being cut by 281 deg. 20 min., in a distance of 6 miles. Beginning 10 miles west of the west end of the work in Brown canyon, the line was also revised between Buena Vista and Harvard for a distance of 13.5 miles, eliminating 35 curves out of a total of 69. Many of the curves on the old line were over 12 deg., the maximum being 12 deg. 40 min. On the new line there are four 6 deg. curves and the remainder are



Map of the D. & R. G. W. System, Showing Locations of Line Revision Work

following data. On the original line there were two curves of 11 deg. and over, 33 between 10 deg. and 11 deg., 6 between 9 deg. and 10 deg., 17 between 8 deg. and 9 deg., 11 between 7 deg. and 8 deg., and 19 between 6 deg. and 7 deg., in addition to 110 curves of less than 6 deg., including parts of compound curves. On the new line, which was completed in 1927, there are 32 curves ranging from 6 deg. to 7 deg., and 83 curves less than 6 deg., with only one compound curve. Twenty-seven simple and compound curves, together with 944 deg. 51 min. of central angle, were eliminated, and the length of curved line was reduced three miles.

under 6 deg., while 693 deg. of central angle were eliminated.

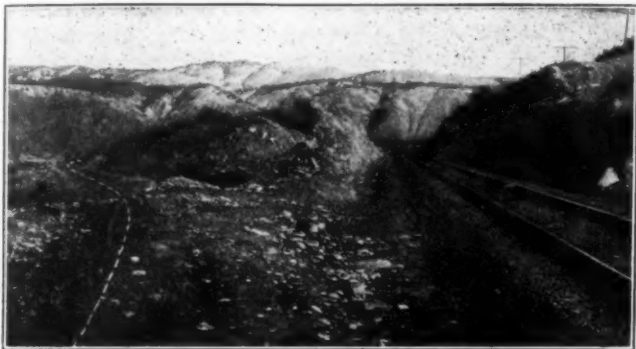
In the work from Minutun to Eagle, the old line had an excessive amount of curvature, with a maximum of 12 deg., and with many curves over 10 deg. On the new line there are three 6 deg. curves and 45 curves of less than 6 deg., eight curves and 435 deg. 43 min. of central angle having been eliminated. In addition, several sharp breaks in the grade line were taken out. In similar work through Glenwood canyon between Gypsum and Glenwood, where there were numerous curves of from 10 deg. to 12 deg., 26 curves out of a total of

79, together with 435 deg. of central angle, were eliminated, and the sharpest curve on the new line is 8 deg., most of the others having been reduced to 8 deg. or less. Through this stretch the line was moved away from the face of the cliffs, where trouble had been experienced with falling rocks which frequently interrupted traffic with the track in its old location.

Minor changes, which resulted in marked improvements were made at various points between Rifle and Palisade, mile posts 386 to 437. Maximum curves of 8 deg. were reduced to 6 deg. in the vicinity of Nigger Hill, Akin and Tunnel, and the line was changed at De Beque to get it away from a slide which had been a menace for years. Near De Beque, a reduction of grade from 1.22 per cent, uncompensated, to 1 per cent, com-

more than a mile long. One of these curves is 8,000 ft. long, and replaces three curves in the same direction and one in the opposite direction.

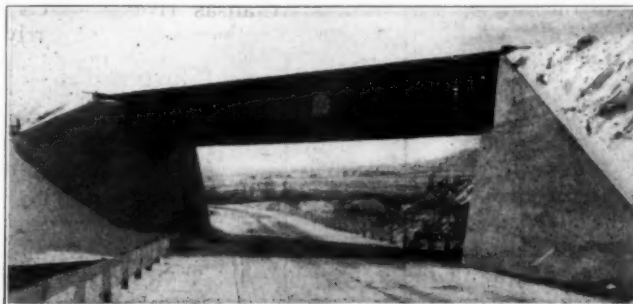
For much of the distance through this canyon the cliffs overhang the track to heights up to 500 ft. and much trouble had previously been experienced with falling rock. At such places the track was lined away from the face of the cliff by building the embankment



Heavy Curvature Eliminated by Light Work Near Glenwood Springs—Old Line at Left

pensated, increased the tonnage rating 200 tons for westbound trains over the district.

Extensive work was done in Ruby canyon between Mack, Colo., and Westwater, Utah, Mile Post 470 to 487. Through this canyon, there were many abrupt changes of alinement with six 6 deg. and 6 deg. 20 min. curves, with the result that on the old line it was necessary to maintain speed restrictions of 30 miles an hour. On the new line, 19 curves out of a total of 39 were eliminated and the amount of central angle was reduced by 224 deg. 34 min., while the sharpest curves have been eased to 4 deg. One feature of this realignment was the ability to substitute long light curves for a number of sharper curves, there being three 1 deg. curves, each



The Bridges are Designed for Heavy Loading

into the river. There has been little trouble from water in this canyon, and where it was necessary to encroach on the stream to provide a roadbed, a wall of loose riprap was built to a height of from five to eight feet above



Type of Concrete Slab Bridge Used on D. & R. G. W.

high water to hold the fill. The completion of the work has permitted the removal of speed restrictions through the canyon and has also eliminated the services of six watchmen.

A striking improvement in alinement on a minor project was made at Husted, Colo., on the line between Denver and Pueblo. Here, in a distance of 1.39 miles



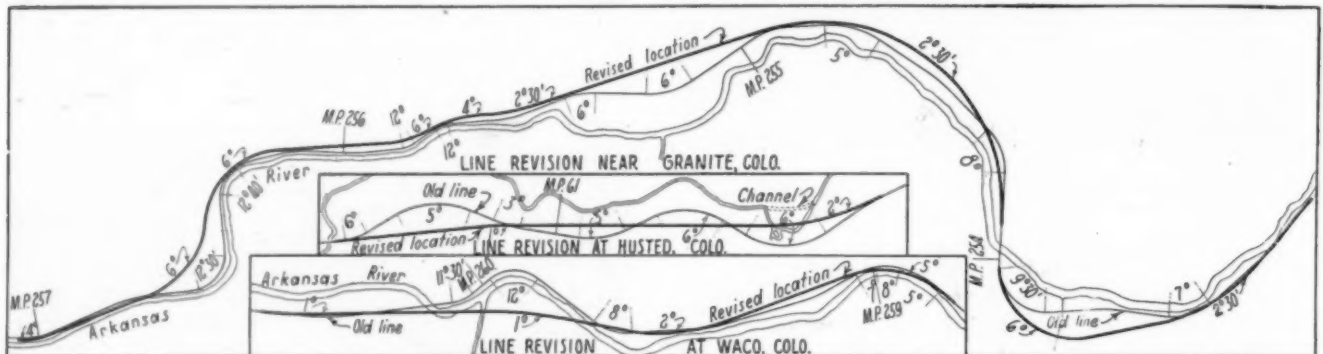
The D. & R. G. W. Hauls Long Trains in Spite of Heavy Grades

on high-speed track, seven curves, all but one of which were reversed, were replaced with one 30 min. curve, 630 ft. long, and one 2-deg. curve, 1,300 ft. long, with 3,060 ft. of tangent between them. In the old line the curves ranged from 3 deg. 6 min. to a maximum of 6 deg. 19 min., and, while they were spiraled, the tangents between them were short, and the total length of straight track within the limits of the realignment was only 1,400 ft. This change, which eliminated 235 deg. 36 min. of central angle, was accomplished at a cost of only \$67,450.

Heritages of Narrow-Gage Construction

Most of the operating troubles which the present management faced when it took over the road from the hands of a receiver late in 1924 were heritages from the narrow-gage standards to which the line was built in the 70's and 80's, aggravated by a series of financial vicissitudes. These latter were due, in large part, to the great decline in the mining of precious metals in Colorado during the last 30 years, and the resulting loss in revenue which precluded necessary expenditures for the proper maintenance of the physical property, to say

As built originally, the main line extended west from Salida, Colo., crossing Marshall pass at an altitude of 10,856 ft. and proceeding thence, via Gunnison and Montrose, to Grand Junction in the valley of the Colorado river. In the location of this line over the pass, 4 per cent grades and 24 deg. curves were used for several miles on both approaches to the summit, while the same grades and curves were employed in crossing a secondary summit a short distance east of Montrose. In the meantime, a branch had been built northwesterly from Salida to Rock Creek, Colo., to reach mines at that point and at Leadville. This line crossed Tennessee pass at an altitude of 10,239 ft., while the topography permitted maximum grades of 1.42 per cent on the eastern approach, although necessitating 3.33 per cent grades, with maximum curvature of 16 deg., on the approach from the west. By the construction of a second track at a later date for eastbound trains the maximum grade was reduced to 3 per cent and the maximum curvature to 10 deg. The Rock Creek line was extended to Glenwood Springs in 1887, and to Grand Junction in 1889, and, coincident with the widening of the gage of the main line to stand-



Details of Line Revisions at Granite, Husted and Waco

nothing of its improvement, to meet the demands of the heavier power which had been introduced to effect economies in the handling of its traffic.

Started as a narrow gage line from Denver to Florence, Colo., in 1871-72, the main line was extended by successive stages until it reached Ogden in 1883, traversing the mountainous regions of Colorado and Eastern Utah. Through the mountains, the line was located in the canyons of the streams and the maximum grades were 1.42 per cent against traffic in each direction, except where heavier grades were necessary to cross the Continental Divide in Colorado and the Wasatch range in Utah. Sharp curves were used freely to minimize grading quantities and bridge work, and, from the character of the country traversed, a large amount of rise and fall was inevitable, as will be seen from the accompanying condensed profile.

and in 1890, through service between Denver and Ogden was routed over Tennessee pass, and the line over Marshall pass, from Salida to Montrose, was continued narrow gage.

Heavy grades were also necessary over Soldier Summit in Utah, where a maximum of 4 per cent was adopted on the western approach, and 2.40 per cent on the eastern approach, with maximum curvature of 8 deg. 40 min., the grades on the approach from the west being reduced to 2 per cent in 1913.

The main line between Denver and Pueblo, 119 miles, is operated as double track, the single main tracks of this road and the Atchison, Topeka & Santa Fe being used in conjunction for this purpose over a considerable part of the distance. The line is double tracked from Pueblo west to Swallows, about 15 miles, and also between Florence and Canon City, about 8 miles, while

Location	Mile-post to Mile-post	Length, Miles	No. of Curves			Maximum Curvature		Central Angle Eliminated deg. min.	Cost of Project \$
			Old Line	New Line	Eliminated	Old Line deg. min.	New Line deg. min.		
(a) At Husted, Colo.	60.44—61.83	1.39	7	2	5	6 19	2	235 36	67,450
(b) Swallows, Colo., to Florence..	135.—150.	14.81	50	30	20	9	4	350	377,000
(c) Parkdale to Cleora	172.—212.2	40.23	139	112	27	12 20	7	944 51	796,000
(d) Brown Canyon	222.—230.	5.95	29	17	12	10 33	8	281 20	277,000
(e) Buena Vista to Harvard	240.—260.	13.50	69	34	35	12 40	6	693	405,000
(f) Near Tennessee Pass		0.73	4	3	1	10	5 45	42 39	50,000
(g) Near Rock Creek	296.—298.	2.00	—	—	—	15 44	12	—	90,000
(h) Minturn to Eagle	303.—325.	21.15	56	48	8	12	6	435 43	476,000
(i) Gypsum to Glenwood Springs	335.—360.	22.95	105	79	26	12	10	434 41	476,000
(j) Rifle to Palisade	386.—437.	5.21	13	12	1	8	6	—	200,000
(k) Mack, Colo., to Westwater, Utah	470.—487.	16.17	39	20	19	6 20	4	224 34	575,000
(l) Woodside	582.	0.52	2	2	—	6	3 20	2 30	25,000
(m) Verde	597.—599.	1.28	3	1	2	6	3 20	68 27	300,000
Totals		145.89	516	360	156			3713 21	\$4,114,450

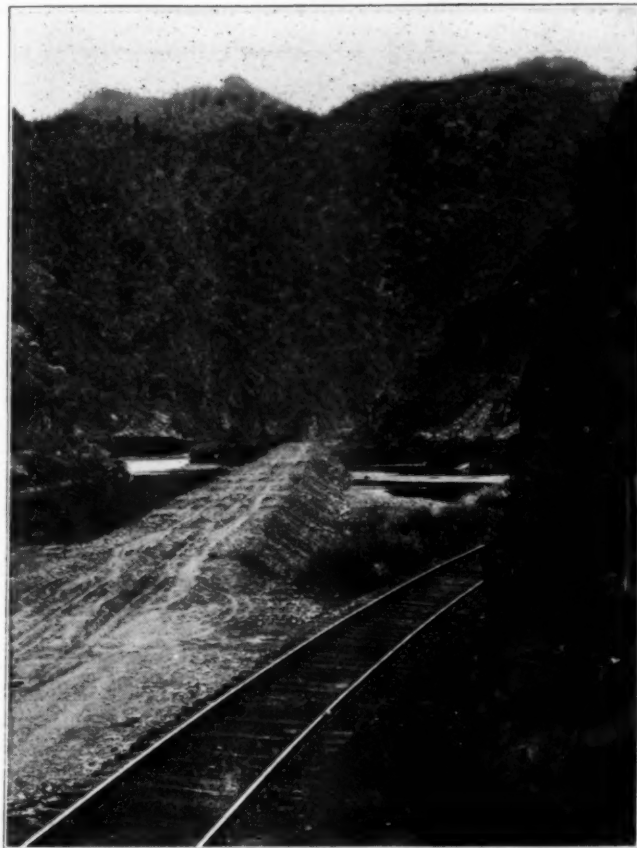
there is about 4 miles of second track at Salida. The western approach to Tennessee pass is double tracked from Deen to Minturn, approximately 17 miles, and double-track operation over Soldier Summit is provided by a second track between Helper and Thistle, 55 miles, supplemented by joint trackage with the Utah Railway between the latter point and Provo, a further distance of 20 miles. There is also a stretch of double track 10 miles long from Midvale into Salt Lake City, the total second track operation between Denver and Salt Lake City amounting to approximately 248 miles, or about one-third of the mileage between these points.

Physical Condition of Main Line Was Poor in 1925

At the beginning of 1925, the main line was in poor physical condition as regards roadbed, bridges and track. Both the embankments and cuts were narrow, due in large measure to their not having been widened sufficiently when the gage was changed in 1890, which made it difficult to maintain the track in line and surface on the fills and prevented proper drainage in the cuts. Many of the bridges were framed trestles on insecure footings, subjecting traffic to frequent interruptions from both fires and washouts. The ballast was meagre and disconnected, little of the track being ballasted with suitable material. The ties were of untreated native timber and only a few of them were protected by tie plates, most of which were small and of doubtful benefit, with the result that the tie renewals were heavy, averaging more than a million annually for the 2,600 miles which made up the system, and running as high as 1,000 ties per mile of track in some places. The majority of the

traffic, and it was imperative that the roadbed, bridges and track be brought to a standard in keeping with the traffic requirements.

The expenditures required for the complete program of improvements, including the work to be done during the current year, amount to \$26,863,147, of which \$21,656,518 is chargeable to capital account, and the remainder, \$5,206,629, to operating expenses incident to the improvements. The distribution of the capital ex-



Channel Change and Line Revision a Short Distance Above the Royal Gorge

Expenditures for Improvements on D. & R. G. W. 1925 to 1928 Inclusive

Nature of Improvement	1925	1926	1927	1928	Total
Bank widening and riprap	\$49,000	\$19,000	\$29,000	\$16,000	\$113,000
Ballasting	316,000	453,000	268,000	174,000	1,211,000
Rail changes	219,000	329,000	575,000	686,480	1,809,480
Bridges, trestles and culverts	120,000	286,000	323,000	720,500	1,449,500
Tunnel and subway improvements	10,000	117,000		87,000	214,000
Elimination of grade crossings	1,000	55,000	52,000	85,000	193,000
Additional main tracks			4,000	95,000	99,000
Additional yard and industry tracks ..	300,000	477,000	443,000	407,500	1,627,500
Change of grade or alignment		483,000	1,491,000	428,000	2,402,000
Signals and interlockers automatic block signals ..			175,000	583,000	758,000
Freight and passenger stations, office buildings, etc. ..	50,000	37,000	35,000	12,700	134,700
Water stations ..	2,000	10,000	38,000	169,400	219,400
Shops, enginehouses, etc.	47,000	30,000	19,000	52,400	148,400
Construction of extensions, branches and other new lines		420,000	139,000	160,000	719,000
Shop machinery and tools	33,000	30,000	23,000	16,681	102,681
Steam locomotives, cars and work equipment	2,132,835	4,769,295	2,221,302	154,920	9,278,352
Miscellaneous improvements	60,425	869,953	120,127	127,000	1,177,505
Total capital charges	\$3,340,260	\$8,385,248	\$5,955,429	\$3,975,581	\$21,656,518
Operating expenses incident to above improvements	\$606,323	\$977,793	\$2,041,753	\$1,580,760	\$5,206,629
Total	\$3,946,583	\$9,363,041	\$7,997,182	\$5,556,341	\$26,863,147

rail in the main line was of 85-lb. section, and was badly worn and surface bent, some of it having been in the track for 26 years.

Such was the condition of the roadbed and track over which were operated Mallet locomotives with a tractive power of 107,374 lb., and a total weight of 534,000 lb., as well as locomotives of the 2-10-2 type with a tractive force of 81,200 lb. and axle loadings of 70,400 lb. This power was necessary for the economical handling of

penditures to the various accounts for each year is given in the accompanying tabulation, which shows that the expenditures for roadway, roadway structures and tracks, together with signals and interlockers, account for \$10,949,580, or slightly more than half of the total amount.

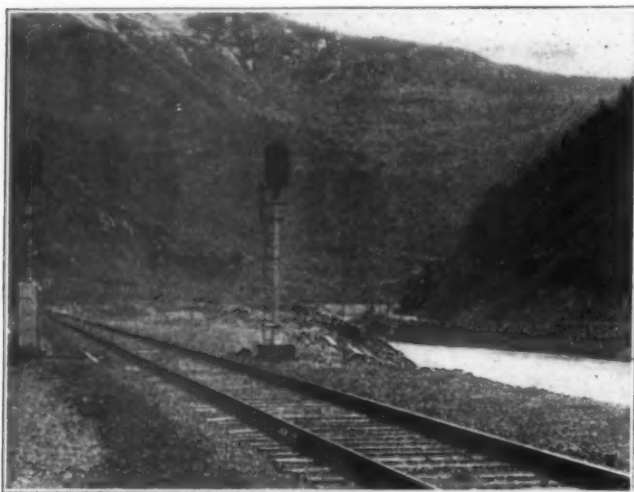
The expenditures authorized cover not only improvements on the main line from Denver, Colo., to Ogden, Utah, 782 miles, but on the secondary main lines and branches as well, where improvements have been made in keeping with the amount of traffic handled. The total length of these secondary lines is approximately 1,800 miles, of which about 50 per cent is narrow gage.

Roadbed Was Widened

The first step in the rehabilitation of the line was the establishment of a standard roadbed, with widths of from 20 to 24 ft. on embankments, depending on the height of the embankment and the degree of curvature, and of 20 ft. in cuts, with 4-ft. ditches outside the roadbed. All of the main line has now been brought to this standard. Fortunately, the material encountered along the line is well adapted for the construction of a stable roadbed.

In the prosecution of this work, much of which was

carried on in conjunction with the revision of alinement to eliminate curvature, various methods were employed. Where it would not interfere with the use of the operated tracks, the work was done by contract, using steam shovels which ranged from those of the heavy railroad types to the smaller gasoline-operated units, loading into either standard gage or narrow gage cars. At other places drag-line machines and power shovels were used, and the earth was loaded in small dump cars, motor trucks, or in wagons hauled by caterpillar tractors, as conditions warranted. In addition to con-



Slag Ballasted Track and Block Signals Near Glenwood Springs

tractor's equipment on the line, the work equipment of the D. & R. G. W. includes 11 ditchers, of which 8 are standard gage, 8 locomotive cranes with clamshell buckets, 4 steam shovels, 22 air dump cars for ditchers, 25 Clark dump cars, 500 Hart convertible ballast cars and 3 Jordan spreaders, one of the latter being narrow gage. This equipment was used by the railway, both in the roadbed widening and line revision, and in its ballasting operations.

After the roadbed was widened, the ballasting of the main line was begun. From Denver to Ruby, Colo., 472 miles, slag obtained from smelter dumps at Salida and Leadville was used. This slag, which resulted from the smelting of the precious-metal ores, breaks into angular pieces ranging in size from $\frac{1}{2}$ in. to 2 in., does not disintegrate, and holds the track in line and surface better than any other material available in that territory. From Ruby to Helper, 154 miles, through what is known as "the desert," gravel ballast was used from a pit located at Floy, about 70 miles west of Ruby. This stretch of track had never been ballasted before and no suitable material had been found in that territory until the discovery of the high-grade gravel at Floy. From Helper to Ogden, 156 miles, clean bank gravel is obtained from a pit at Nash, Utah, where the deposit has a face 100 ft. high. The miles of track ballasted and the quantities applied, including the program for 1928, are summarized below.

Year	Slag		Gravel		Total	
	Miles	Cu. Yds.	Miles	Cu. Yds.	Miles	Cu. Yds.
1925	68.53	158,322	20.38	58,822	88.91	217,144
1926	119.65	239,780	96.59	220,603	216.24	460,383
1927	57.87	132,122	26.61	72,060	84.48	204,182
Total 1925-27	246.05	530,224	143.58	351,485	389.63	881,709
1928 Program	54.81	137,550	.....	.....	54.81	137,550
Total	300.86	667,774	143.58	351,485	444.44	1,019,259

At the close of 1928, there will be no unballasted track between Denver and Ogden. In addition to the ballast applied to unballasted track, more than 300,000 cu. yd. was used in adding to or renewing ballast on track previously ballasted.

Treated Ties and Heavier Rails Are Used

To eliminate the uneconomical use of untreated ties, arrangements were made for a timber preservation plant to be built at Salida in 1925, this point being selected because of its favorable location, with respect both to points of production and the subsequent distribution of the ties. Salida is one of the junctions of the standard gage and narrow gage lines, and the location of the treating plant at that point eliminates the necessity of transferring the ties from the cars of one gage to those of the other, either for receipt or shipment most of the production originating along the narrow gage lines.



Realinement and Grade Revision Near Yale, Showing New Line by Dotted Line

The ties are treated with a creosote-petroleum mixture. Since 1926, none but treated ties have been inserted in either main lines or branches, and tie plates have been applied out of face. All ties are spaced when new rail is laid and sufficient rail anchors are used to prevent creeping.

In planning its rail renewal program, three standard weights of rail were adopted. Ninety-pound rail is used on the track in "the desert" where the density of traffic is the lowest, and where the curves and grades are the least severe. On the remainder of the line, 100-lb. rail is used where the curvature does not exceed 6 deg., and 110-lb. rail where the curvature is sharper than 6 deg. The mileage of track relaid with new rail, together with the 1928 program is as follows:

Year	90-lb.	100-lb.	110-lb.	Total
1925	85.9	...	...	85.9
1926	93.6	...	...	93.6
1927	116.0	...	...	116.0
1928	...	65.0	55.9	120.9
Total	295.5	65.0	55.9	416.4

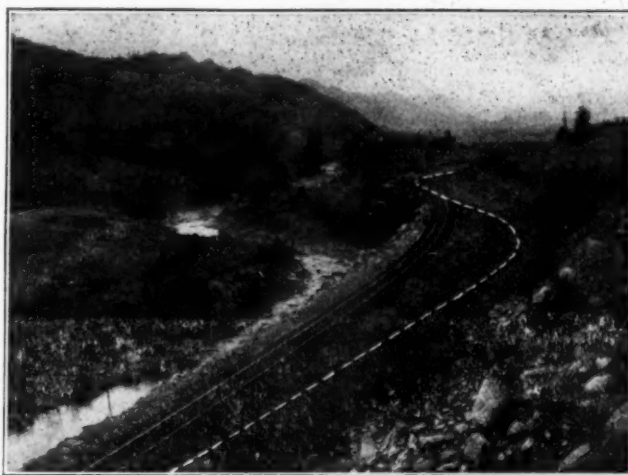
Other Improvements Were Made

Along with the improvements in the roadbed and track, permanent construction was adopted for all bridge and culvert work on the main line. During the three years from 1925 to 1927, inclusive, 20 new steel bridges on concrete sub-structures have been installed, 12 steel bridges, too light for the new power, have been replaced with heavier spans, and 10 other bridges have been strengthened, while 30 concrete ballasted-deck trestles have been built. During the same time, 7,000 lin. ft. of timber trestle, or 37 per cent of the total, have been replaced with permanent structures or eliminated entirely by the installation of concrete boxes or pipes. Numerous wooden culverts have been replaced with permanent construction, and more than 350 new culverts have been provided to care for the cross drainage more effectively.

All new structures are designed for Cooper's E-70 loading, and a record is kept of the stresses set up by actual loadings in the members of all spans. With one exception, no structure on the main line now imposes any speed restrictions on the heaviest power in service, and the program for 1928 will dispose of the majority of the remaining temporary structures in important territories. At one place near Buena Vista, a deck-plate girder 120 ft. long was installed on concrete piers,

with 38-ft. deck plate approach spans at each end. This is said to be the next to the longest span of its kind ever fabricated by the American Bridge Company.

Other work included in the program included the enlargement of tunnels to standard clearance wherever necessary. Despite the mountainous territory traversed, there are only 11 tunnels, with an aggregate length of 8,940 ft. on the main line, the longest of these, 2,577 ft., being at the summit of Tennessee pass. In spite, too, of its altitude—the line crosses three major summits at elevations ranging from 7,237 ft. to 10,239, and



A Minor Revision Near Yale Made a Great Improvement in the Alinement, Old Line Being Shown Dotted

the lowest altitude on the line is 4,075 ft.—little trouble is experienced with snow, and snow sheds are not necessary. The first installation of automatic block signals on the D. & R. G. W. was made in 1927, when 135 miles of line between Minturn and Palisade was equipped with color-light signals. During the current year, these signals will be extended to Soldier Summit, a distance of 215 miles, thus bringing the total signaled mileage to 350, in a continuous stretch. The double track between Helper and Soldier Summit, where a heavy westbound coal traffic is handled, will be signaled for both normal and reverse movements.



An Extensive Line Revision Near Wolcott, Old Line at Right

In addition to the heavy power operated prior to 1925, the road has since purchased 10 standard gage simple Mallet (2-8-8-2) locomotives with a weight of 559,500 lb. on the drivers, and a tractive force of 131,800 lb., together with 10 mountain-type locomotives, with 290,530 lb. on the drivers, and a tractive force of 74,970 lb. The tenders of the Mallet locomotives have a capacity of 30 tons of coal and 18,000 gal. of water, while those of the mountain-type locomotives carry 25 tons of coal and 15,000 gal. of water. Data regarding the largest standard gage locomotives operated by the road are shown in the appended table.

Data on Heavy Locomotives on the D. & R. G. W.

No.	Type	Wt. of Engine and Tender in Working	Length Overall	Tractive Force lb.
		Order lb.		
10	Mallet, simple	992,500	120 ft. 6 in.	131,800
10	Mallet, compound	744,000	105 ft. 2 in.	107,374
16	Mallet, compound	629,200	95 ft. 3 in.	95,000
10	Santa Fe	624,900	87 ft. 4 in.	81,200
10	Mountain	651,800	95 ft.	78,967
10	Mountain	710,310	97 ft. 2 in.	74,970
20	Mountain	646,200	95 ft.	66,640

* With booster.

With the increased train loads made possible by the heavier power and the improvements in the track, longer passing and yard tracks became necessary and these were provided by the extension of 81 passing tracks to a length sufficient to hold trains of from 90 to 110 cars, as well as the construction of 4 new passing tracks with a capacity of 100 cars, and 3 with a capacity of 90 cars. Yard extensions were made at Pueblo, Minturn, Green River, Grand Junction and Salt Lake City.

Main Line Through Freight Traffic

Is Fairly Well Balanced

Freight traffic on the main line consists of a fairly well balanced through business between connections at Denver, Colorado Springs and Pueblo, at one end of the road and Ogden and Salt Lake City at the other end, in addition to a large coal and ore traffic from Salida to Pueblo, and a heavy movement of coal from Helper to Salt Lake City. This traffic, in each case, is of comparatively short haul, and must cross a major summit between its origin and destination, thus introducing heavy grades against the traffic, with the further complication that the coal and ore moving via Salida is obtained from fields located on the narrow-gage lines and must be transferred to standard gage cars. To effect economies in this transfer, a car dumper was built at Salida in 1924, as described in the December 20, 1924, issue of *Railway Age*, page 1115, which has reduced the cost of handling to about one-sixth of that of hand labor, and, in addition, has made marked decreases in the amount of switching required and in the detention of cars.

A considerable passenger traffic is also handled between Denver and Pueblo on the east and Salt Lake City and thence to the Pacific coast on the west, in conjunction with the Western Pacific. During the summer months, this traffic is augmented by a large tourist business, attracted by the mountain scenery.

Benefits Gained by Improvements

Among the benefits resulting from the various improvements may be cited the expediting of both freight and passenger trains, with a marked decrease in the overtime pay of train crews, a reduction in coal consumption, freedom from serious delays by washouts, fires and falling rocks, greater efficiency in the use of power by longer engine runs, which also permit decreased engine terminal forces at intermediate points,

freedom from train accidents, and also, but by no means the least important, a great improvement in the morale of the employees.

Indicative of the improvement in service is the shortening of the schedule of the Panoramic special, a train operated between Denver and Salt Lake City during the tourist season. With the resumption of service in June, 1928, its time westbound has been cut 2 hr. 45 min. This train, which formerly left Denver at 4:15 a. m. and arrived at Salt Lake City at 8:30 the next morning, now leaves Denver at 7:45 a. m. and arrives at Salt Lake City 45 min. later than on the former schedule. Besides shortening the time, the new schedule permits connections with trains arriving in Denver in the morning.

This realignment and improvement work has been done under the general supervision of J. S. Pyeatt, president, and under the personal direction of A. C. Shields, general manager, of the D. & R. G. W. to whom we are indebted for information furnished and courtesies extended to us in making an inspection of the work.

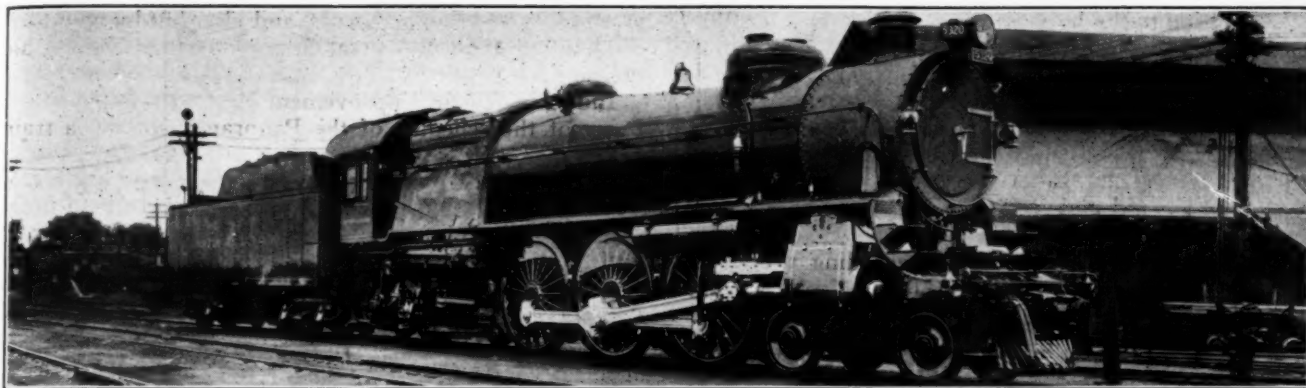
Southern Authorized to Abandon 39-Mile Branch

WASHINGTON, D. C.

AFTER having twice denied the application of the Southern for a certificate authorizing the abandonment of its branch line from Morristown to Corryton, Tenn., 39 miles, the Interstate Commerce Commission on August 29 made public a report and order authorizing the abandonment of the line on condition that the part between Morristown and the approach to the Holston river bridge shall be continued as a spur track for switching to the city's water power plant. The report states that the certificate is issued in reliance on an offer of the Southern to undertake to provide, until December 31, a truck service or other means for the transportation of freight delivered to it along the line for shipment, charging for such service the same rates it now charges for freight service.

The Southern applied for a certificate authorizing abandonment of the line on October 4, 1924. On October 14, 1925, the commission denied the application but announced that at the end of one year from October 1, 1925, the application, unless withdrawn, would be assigned for further hearing. Again on September 9, 1927, the commission denied the application without prejudice to a renewal after two years but on July 3, 1928, the Southern asked for a re-opening, pointing out that traffic had not increased and that parts of the line had been so seriously damaged by a cloudburst that \$90,000 to \$100,000 would be required to put the line in condition for safe operation. At the further hearing the deficit from operation of the line for the year ended September 30, 1928, was estimated at \$108,883.

The report states that the line has never been a paying one, that due to the increasing motor vehicle transportation there is no prospect of any increase in the use which the people of the territory make of the railroad, and that "With the advent of the automobile, automobile busses and trucks, and the improved highways, the territory adjacent to the K. & B. is within reasonable distance of the main lines of the applicant and may be considered as served by them. It does not appear that the abandonment of the K. & B. will materially affect the community as a whole."



Baltimore & Ohio 4-6-2 Type Locomotive, No. 5320, "President Cleveland"

Baltimore & Ohio "President Cleveland" Locomotive

Equipped with Caprotti valve gear and exhibited at the Atlantic City Convention

ONE OF THE most interesting features in the track exhibit at the American Railway Association Conventions, at Atlantic City, N. J., last June, was the Baltimore & Ohio Pacific type locomotive "President Cleveland." A brief description of this locomotive appeared in the June 20, 1928, *Daily Railway Age*.

The "President Cleveland" was built at the Mt. Clare, Md., shops of the Baltimore & Ohio and, during the process of breaking in early in June was given a number of dynamometer tests. These tests were made over the Cumberland division, eastern lines, between Keyser, W. Va., and Brunswick, Md. It was reported at that time, that in all probability further test runs would be made between New York and Washington, D. C., Washington and Pittsburgh, Pa., and Pittsburgh and Chicago. No information relative to these contemplated road tests has as yet been released for publication.

Marked Resemblance in Lines and

Finish to British Design

As in the others of its "president class" locomotives, the railroad has exercised particular care in the design to make the lines of the locomotive as smooth and pleasing to the eye as possible. To one familiar with British locomotives, a marked resemblance in lines and finish will at once be apparent. The air compressor is located between the frames, back of the main drivers; the headlight generator is on the rear deck on the left side, convenient for adjustment from the ground. The piping, as far as possible, has been suspended from the running boards, and the air pipes and a number of other pipes are welded to eliminate screwed joints. The exhaust steam pipe to the Elesco exhaust steam injector is placed between the frames and is carried through the ash pan at the rear of the locomotive.

The "President Cleveland" was carefully broken in in both freight and passenger service, at which time complete dynamometer records were made and indicator cards taken. The Caprotti valve gear used on this locomotive had been in continuous service on a Baltimore & Ohio 2-8-0 type locomotive, No. 2722, for about 15 months previous to its application to the "President

Cleveland." Representative indicator cards, taken at various speeds and working conditions in both passenger and freight service, show an indicated horsepower as high as 2,330. At no time during the road tests, in which the cards were taken, was the locomotive hauling its maximum rated tonnage. At the time the passenger service indicator cards were taken, the actual tonnage behind the tender was 750, while the usual passenger train tonnage over the Cumberland division is about 900.

A table showing the average results obtained from the road tests with the "President Cleveland" between Keyser and Brunswick, was included in the article published in the June 20, *Daily Railway Age*. Some of the figures given in that table are: Coal consumption per drawbar horsepower hour, 2.41 lb.; coal consumption per square foot of grate per hour, 42.22 lb.; water consumption per pound of coal, 7.35 lb.; steam consumption per drawbar horsepower, 19.59 lb. The average drawbar pull was 19,082 lb. during the eastbound trip and 20,736 lb. during the westbound. The boiler efficiency averaged between 61 and 62.1 per cent. The actual tonnage hauled on the eastbound trip was 3,628, and 1,499 on the westbound.

Indicator cards taken in passenger service at speeds of 60 m.p.h. and at 25 per cent cut-off, showed a total indicated horsepower of 2,270.8. At a speed of 46.4 m.p.h. and 40 per cent cut-off, the cards showed an indicated horsepower of 2,330.4. At 44 m.p.h. and 25 per cent cut-off, the total indicated horsepower was 2,103.8 while 1,879 i.hp. was calculated at 30 m.p.h. and at 30 per cent cut-off. In the first three instances the locomotive was run with 100 per cent throttle opening, while in the last, the throttle was closed to 75 per cent opening.

The average back pressure ranged from 12 lb. to as low as 6 lb. The highest being obtained with a 100 per cent throttle and 40 per cent cut-off, and at a running speed of 45.4 m.p.h., while the lower figure of 6 lb. was had with a 75 per cent throttle, 30 per cent cut-off and at a running speed of 30 m.p.h. A variation in boiler pressure of 10 lb. occurred during the passenger service tests.

Somewhat lower back pressure figures were obtained in freight service, the highest being 10 lb. with a 100 per cent throttle and 50 per cent cut-off, and at a speed of 22 m.p.h., while the lowest back pressure figure was 5 lb., obtained with a 100-per cent throttle and cut-off of 60 and 70 per cent, and at a speed of 13 m.p.h. All of the tests in freight service were run with 100-per cent throttle opening. A total indicated horsepower of 1,991 was obtained with 50 per cent cut-off at a speed of 22 m.p.h. At 18 m.p.h and 70 per cent cut-off, a total indicated horsepower of 1,948.7 was obtained. Indicator cards at cut-offs of 70 and 60 per cent were also taken in the freight service tests at speeds of 13 m.p.h.

Table Showing the Principal Dimensions, Weights and Proportions of the "President Cleveland"

Railroad	Baltimore & Ohio
Builder	Baltimore & Ohio
Type of locomotive	4-6-2
Service	Passenger
Cylinders, diameter and stroke	27 in. by 28 in.
Valve gear, type	Caprotti
Weights in working order:	
On drivers	203,500 lb.
On front truck	62,000 lb.
On trailing truck	64,000 lb.
Total engine	329,500 lb.
Tender	240,000 lb.
Wheelbases:	
Driving	14 ft.
Total engine	37 ft. 1 in.
Total engine and tender	78 ft. 2 7/16 in.
Wheels, diameter outside tires:	
Driving	80 in.
Front truck	36 in.
Trailing truck	52 in.
Journals, diameter and length:	
Driving, main	12 1/2 in. by 13 in.
Driving, others	11 in. by 13 in.
Front truck	7 in. by 12 in.
Trailing truck	9 in. by 14 in.
Boiler:	
Type	Conical (water-tube firebox)
Steam pressure	230 lb.
Fuel, kind	Bituminous
Diameter, first ring	86 13/16 in.
Firebox, length and width	120 in. by 84 in.
Water tubes, number	110
Water tubes, diameter, outside	2 1/2 in.
Water tubes, average length	6 ft. 4 in.
Tubes, number and diameter	205—2 1/4 in.
Flues, number and diameter	40—5 1/2 in.
Length over tube sheets	23 ft. 3 3/4 in.
Grate area	70 sq. ft.
Heating surfaces:	
Firebox	117 sq. ft.
Water and arch tubes	340 sq. ft.
Total firebox	457 sq. ft.
Tubes and flues	4,138 sq. ft.
Total evaporative	4,595 sq. ft.
Superheating	1,188 sq. ft.
Comb. evaporative and superheating	5,783 sq. ft.
Tender:	
Water capacity	12,000 gal.
Fuel capacity	17 1/2 tons
Journals, diameter and length	6 1/2 in. by 12 in.
General data, estimated:	
Rated tractive force	50,000 lb.
Curvature, normal speed	13 deg.
Curvature, slow speed	18 deg.
Turntable, length	80 ft.
Weight proportions:	
Weight on drivers ÷ total weight engine, per cent	62.4
Weight on drivers ÷ tractive force	4.07
Total weight engine ÷ comb. heat. surface	56.9
Boiler proportions:	
Tractive force ÷ comb. heat. surface	8.65
Tractive force × dia. drivers ÷ comb. heat. surface	692
Firebox heat. surface ÷ grate area	6.54
Firebox heat. surface per cent of evap. heat. surface	10
Superheat. surface per cent of evap. heat. surface	25.9

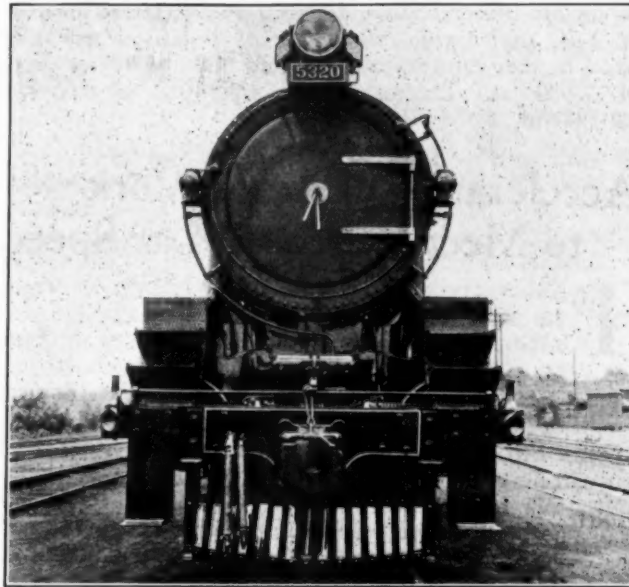
and 13.3 m.p.h., respectively. The cards taken for the former showed a total indicated horsepower of 1,449, while the latter showed 1,482.9 i.h.p. A variation in boiler pressure of only 5 lb. occurred during these tests.

The Caprotti poppet valve gear is entirely different in principle from any other types of gears now generally applied to locomotives in this country. Briefly, it is an angular motion gear, which follows all the angular positions of the crank during a complete revolution. It obtains its motion from a gear attached to the driving axle.

On the 2-8-0 type locomotive, referred to in a preceding paragraph, the gear box is attached to the second driving axle and, on the "President Cleveland" to the main driving axle. The gear on the axle engages with a pinion gear on a longitudinal main drive shaft, which

is located between the frames. At the front end, the drive shaft is connected to a transverse gear box, located in the cylinder saddle at the back, which distributes the motion to transverse shafts, and thence to the gear box located on each cylinder.

Each cylinder is provided with four poppet valves.



Front End View

The two inlet, or steam valves, are located to the inside and the two exhaust valves, to the outside. These valves operate vertically in removable cages in the cylinder and their action is controlled by a cam mechanism in the gear box.

Equipped With Water Tube Firebox

The water-tube firebox is 120 in. long and 84 in. wide with a grate area of 70 sq. ft. It has two longitudinal drums at the top, 30 in. in diameter, and two top and bottom longitudinal headers 7 1/2 in. square. The top headers are connected to the top drums by seven 4-in. circulating tubes on each side. The bottom header, which forms the firebox frame, is connected to the barrel by one connection 9 in. in diameter at the center.

These top and bottom headers are connected together with two rows of 2 1/2-in. diameter vertical tubes; these tubes forming the sides of the firebox. Opposite each vertical tube in the top and bottom headers are plugs which are used for the application and rolling in of the vertical tubes. In addition, the vertical tubes can be turbed at washout periods by the removal of the top plugs only. The novel feature of the firebox is that all the tubes can be applied and rolled, and the entire boiler cleaned without the necessity of a workman having to get inside of the drums. It takes approximately 4 1/2 hours to completely wash-out and clean the boiler and turbine the side tubes. There are no staybolts in the boiler.

The total saturated steam heating surface of the boiler is 4,595 sq. ft. This, with the superheating surface of 1,188 sq. ft., gives a combined heating surface of 5,783 sq. ft. The boiler has 205, 2 1/4-in. tubes and forty 5 1/2-in. flues. In addition to the features already mentioned, the locomotive is equipped with a Standard stoker, Type BK; a screw reverse gear and a B. & O. type superheater.

The important dimensions, weights and proportions of the "President Cleveland" are shown in the table.

The locomotive develops a tractive force of 50,000 lb. which, with the weight on the drivers of 203,500 lb., makes a factor of adhesion of 4.07. The diameter of the drivers is 80 in. and the boiler operates at a pressure of 230 lb. per sq. in. The cylinders are 27 in. by 28 in. The total weight of the engine is 329,500 lb., of which 62,000 lb. is on the engine truck and 64,000 lb. on the trailer truck. It has a total wheelbase of 37 ft. 1 in. and a rigid wheelbase of 14 ft. The tender has a bunker capacity of 17½ tons and a water capacity of 12,000 gal. The total loaded weight of the tender is 240,000 lb.

Accelerating Record Work to Meet Increased Car Speed

THE Norfolk & Western has made large expenditures in improving its facilities at Portsmouth, Ohio, as described in the *Railway Age* of June 16, 1928. The new classification yard is intended primarily for the handling of coal and modern mechanical facilities have been installed to accelerate the movement of cars through the yard. Realizing, however, that a car can move no faster than its billing, the N. & W. has given this feature much study, as a result of which a plan has been evolved whereby the bills travel through the yard as fast as the cars, so that when outbound trains are made up, the billing is ready for them.

The situation at Portsmouth is complicated by the fact that the majority of the loaded coal cars arrive in the yard unweighed and without billing. Cars moving from the mines are carried to Portsmouth under cards only. This arrangement is a convenience to both the shippers and the railway, as it eliminates the necessity of both maintaining elaborate organizations at each of the numerous mines.

The cards under which the cars move are known as "mine tags". The shipper fills in the car number and initial, the name of the mine, its number, the billing station, the date tagged, the grade of coal and the name of the shipper or sales agent to whom the car is tagged.

The greater part of this coal is destined to tidewater, or to lake ports. Coal destined to tidewater moves to Bluefield, W. Va., for weighing, billing and classification, while coal for lake ports and the West moves to Portsmouth. A white tag is used on eastbound coal and a green tag on westbound coal. Nearly all of the coal companies maintain consigning agents at Portsmouth, to whom the coal is "tagged" from the mines, and who give the railway the final destination of the coal upon its arrival at that point. The conductors of trains of coal moving into Portsmouth have no waybills and are required only to make up a consist of the train, showing the car numbers and initials.

As soon as a train of coal arrives at Portsmouth, a clerk goes over the train and pulls the tags from the cars. He enters the tare weight in the proper place on the tag, at the same time checking the car numbers against the switch list, starting from the head end. The tags on which final consignment instructions have not been supplied by shippers at the mine, are turned over to the proper consigning agents, who are advised by their companies as to the orders to be filled. They enter on the tag the information as to consignee, destination, route and whether prepaid or collect. The mine tags are then returned to the weighmaster where they are sorted into the same order as the cars in the train.

All cars are weighed at Portsmouth as they go over the hump. The tag puller has entered the tare weight on the mine tags and the gross weight is automatically

stamped on the tag as the car goes over the scales. An electric computing machine is used by the scale clerk in arriving at the net weight. This machine is so designed that the gross, tare and net weights remain visible after the computation has been made, so that the operator may check his figures easily and quickly.

Switch lists and billing are prepared from the information shown on the tags. Five copies of the switch list are made on a duplicating machine, for distribution to the hump conductor, weighmaster and tower operators. To keep pace with the acceleration of car movement by the installation of car retarders, automatic switch machines, etc., a pneumatic tube conveyor system has been installed. These tubes traverse the yard and serve all the necessary stations in various parts of the yard.



Switch Lists Are Made Out by Duplicating Machines and Distributed by Pneumatic Tubes

The conductors' consists, switch lists and mine tags are all handled by this conveyor system instead of by messenger as heretofore.

There are several units to the system, one being from the receiving yard office to the scale house, with an intermediate station between; another unit connects the crew clerk's office and the engine-house for ordering locomotives, while a third unit extends from the scale house to the two control towers in the yard. This latter unit is used in transmitting switch lists. A fourth unit has been installed between the inbound inspection pits and the master mechanic's office for transmitting inspection reports.

Independent, motor-driven air compressors supply about five pounds of air pressure to drive the cylindrical leather carriers through the tubes. Each receiving and sending station is provided with a signal light. When this light shows red, it indicates that the motor at the other end is in operation and that a carrier is coming through the tube. As a double precaution to prevent collisions, the two motors are connected in such a way that it is impossible to start one while the other is in motion. By use of these various mechanical aids, the handling of the paper work necessary on the cars has been accelerated so as to enable it to meet the increased speed of car handling.

New Locomotives a Boon to Erie

Aid materially in effecting transportation and maintenance economies—Net increases sharply

IN 1927 the Erie retired 367 old locomotives and bought 50 new freight and 30 switching locomotives. For the first six months of 1928 its freight cars per train averaged 66.2, an increase of 13.4 per cent over the first six months of 1927; gross tons per train averaged 2,445, an increase of 10 per cent; train speed showed an improvement of 6.1 per cent and gross ton-miles per train-hour rose to 29,937, an increase of 17.4 per cent.

During the same period of 1928 gross ton-miles increased 2.8 per cent, yet this additional movement was handled with a decrease of 6.6 per cent in freight train-miles and of 9.6 per cent in locomotive-miles. Pounds of coal consumed per 1,000 gross ton-miles declined from 133 to 126, or 5.3 per cent, and average miles per locomotive per day increased 7.8 per cent. Comparative figures for the six months' periods are given in Table 2.

Great Increase in Operating Efficiency

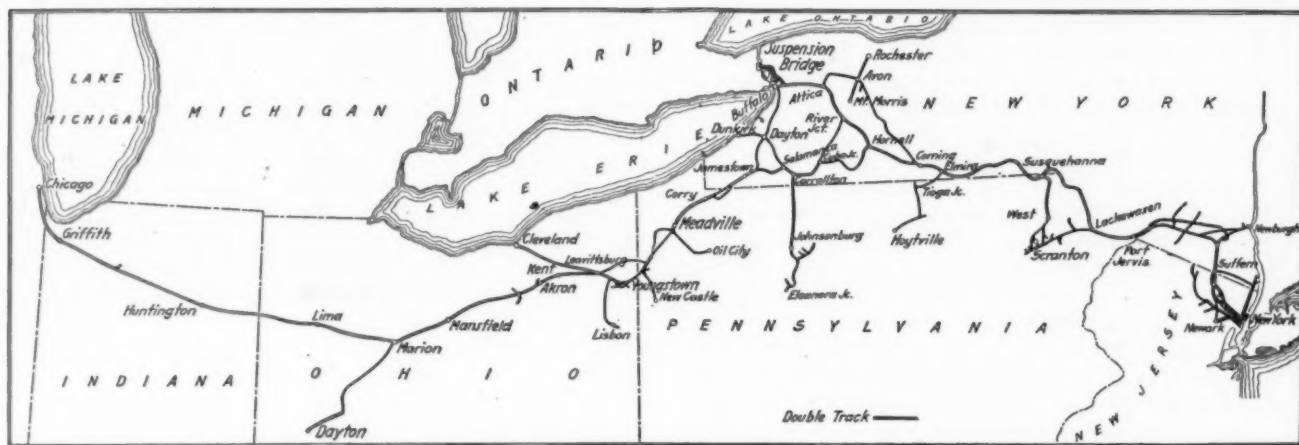
As a result of this great improvement in operating performance, with a decline of 1.3 per cent in total

achieved with operating revenues 11.7 per cent less than they were in the first six months of 1923.

Scrap Old Equipment and

Concentrate Shop Facilities

Of the savings made in operating expenses, that in maintenance of equipment is most striking—\$1,911,631 for the first six months of 1928, as compared with the same period last year. This saving, moreover, has not been made by lowering maintenance standards; indeed it may safely be said that the road's equipment, generally speaking, has never been in better condition. In fact, on June 30, 1928, the run-out mileage on locomotives was 45 per cent, as against 55 per cent a year ago, and the number of serviceable locomotives stored was greater. The retirement of obsolete power and rolling stock—367 locomotives, 249 passenger train cars, 7,298 freight train cars and 886 units of work equipment—did away with units which were disproportionately expensive to maintain. Their partial replacement, also, by new equipment has given the road for its most active power, units on which maintenance costs will be relatively low for several years to come.



The Erie Railroad

operating revenues for the first six months of 1928, the road was able to reduce its operating expenses 5 per cent, compared with the same period last year; and net railway operating income for the first six months of the current year was \$7,977,536—29 per cent better than the same period in 1927. The operating ratio declined from 81.9 to 78.8 and the ratio of transportation expenses to total operating revenues, from 39.7 to 38.8.

Naturally, not all this improvement has resulted from supplanting obsolete power with more modern and efficient locomotives; yet this phase of the management's policy has probably been the most important single factor in the improvement.

And the improvement, incidentally, effected by all phases of the Erie's aggressive rehabilitation policy, is so great that the first six months' total of net railway operating income, \$7,977,536, is the best showing made for that period since 1923, when the total was only \$2,183 greater; and the 1928 six months' total has been

In addition, a revision of shop methods has contributed importantly to lower maintenance of equipment expenses. Prior to the present regime shop work was scattered widely over the system, classified repairs being given in many places which were little more than roundhouses. This work has now been concentrated at two shops—Meadville and Hornell—which have been equipped with modern machinery, materially reducing repair costs. Moreover, classified repairs have been made strictly on mileage schedules, which heretofore had not always been closely adhered to.

To Extend Use of 2-8-4 Locomotives

The Erie's new 2-8-4 freight locomotives are now operating between Marion, Ohio, and Hornell, N. Y. Thirty-five more will be added in September, and then these locomotives will operate as far eastward as Port Jervis. Bridges are being strengthened between the latter point and Secaucus (New York Terminal) and when this work is completed the new power will be in

use over the entire main line where grades are in excess of 0.2 per cent, i.e., from Secaucus westward to Marion, Ohio. Sidings are being lengthened along this section of the line to take care of 125-car trains.

The maintenance of equipment ratio to operating revenues for the first half of 1928 was 22.11, as compared with 25.01 for the same period in 1927. The transportation ratio, as previously stated, was 38.76 and 39.70 respectively for these periods. When the use of the new locomotives is still further extended, further improvement in the transportation ratio may be expected. The fuel efficiency of the new power is admittedly much greater than that of the locomotives, also comparatively modern, which it has replaced. This greater fuel efficiency, it is estimated, is as high as 40 per cent on some divisions.

Shedding further light on the economy made possible by retiring the older power, it is worth while to note that at the beginning of 1927 the Erie had 83 types of locomotives. Now with only 40 classes it has been able to reduce its stores inventory by about \$2,000,000, which reduction must, in large measure, be credited to improved locomotive conditions. The total number of locomotives owned has been reduced by almost 300.

Traffic Volume Maintained

The Erie's traffic is holding up well during the current year, in all probability due to an energetic and successful policy of solicitation, combined with efficient handling of business offered. Revenues from the transportation of coal for the first six months of 1928 have shown some decline from the same period last year, but other freight business has increased almost enough to offset this loss. Operating revenues for the first half of the current year are \$803,467 less than for the same period last year, but operating expenses have been reduced \$2,525,479. Net income for the first six months of 1928 is \$2,807,063, as compared with \$937,156 for the same period in 1927.

The Erie is improving its standards of maintenance of way. Its expenditures for ties and rails in the first half of 1928 have been materially greater than for the first half of 1927. During the year over 1,000,000 ties will be applied as renewals, 98 per cent of which are treated; 157 miles will be rebalasted and 47,000 tons of new rail will be applied. The installation of automatic block signals between Salamanca and Meadville

is being completed, this being the only section of the main line not so equipped.

Altogether, it appears that the Erie, while it has already begun to secure favorable results from the policies put into effect by the management, should continue for some time to realize growing benefits from the further carrying out of these policies—uniform high grade power, centralization and systematization of equipment maintenance, fuel saving, heavier train loading, increased train speed, longer engine runs, etc.

Table 2—Comparison of Selected Freight Operating Statistics

	FIRST SIX MONTHS OF 1928, COMPARED WITH SAME PERIOD IN 1927		Per cent of change	
	6 Mos. 1928	6 Mos. 1927	Inc.	Dec.
Mileage operated	2,317	2,317		
Gross ton-miles (thousands)	13,074,519	12,715,856	2.8	
Net ton-miles (thousands)	5,395,044	5,493,109	1.8	
Freight train-miles (thousands)	5,348	5,724	6.6	
Freight locomotive miles (thousands)	5,336	7,009	9.6	
Freight car-miles (thousands)	353,971	334,392	5.9	
Freight train-hours	436,731	498,719	12.4	
Car-miles per day	38.2	32.4	17.9	
Net tons per loaded car	24.4	26.1	6.5	
Per cent loaded to total car-miles	63.6	64.1	0.8	
Net ton-miles per car day	592	542	9.2	
Freight cars per train	66.2	58.4	13.4	
Gross tons per train	2,445	2,222	10.0	
Net tons per train	1,009	960	5.1	
Train speed, miles per train hour	12.2	11.5	6.1	
Gross ton-miles per train-hour	29,937	25,497	17.4	
Net ton-miles per train-hour	12,353	11,014	6.1	
Lb. coal per 1,000 gross ton-miles	126	133	5.3	
Loco. miles per loco. day	65.0	60.3	7.8	
Per cent freight locos. unserviceable	21.3	22.1	3.6	
Per cent freight cars unserviceable	5.2	7.5	30.7	

The improved prospects of the road have, in fact, given rise to reports that there may be some refinancing—exchanging a new cumulative preferred stock for outstanding non-cumulative, allowing a higher interest rate, but reducing the face value. This report, however, has not been officially confirmed. During 1927, \$19,317,400 general mortgage bonds, series D, were presented for conversion into stock at 200, thereby decreasing the funded debt, and adding \$38,634,800 to capital stock outstanding. The corporate surplus was reduced by the excess of this stock over the converted bonds and by a further \$15,000,000 charging off full depreciation on equipment retired. The reported substitution of a new issue for outstanding preferred would restore a portion of this surplus.

The Erie has suffered with other roads in a loss of passenger business to private automobiles and highway

Table 1—Operating Results, Selected Items

	YEARS ENDED DECEMBER 31, 1920 TO 1927							
	1920	1921	1922	1923	1924	1925	1926	1927
Average mileage operated	2,259	2,309	2,309	2,325	2,325	2,323	2,317	2,317
Total operating revenues	\$122,163,099	\$113,428,076	\$106,874,103	\$132,978,455	\$119,090,856	\$118,543,456	\$125,473,504	\$122,478,355
Total operating expenses	133,014,159	106,117,042	100,101,523	108,070,145	95,784,775	93,238,535	99,173,496	100,264,697
Net operating revenues	Def. 10,851,060	7,311,034	6,772,580	24,908,310	23,312,081	25,304,920	26,300,008	22,213,658
Railway tax accruals	3,804,226	3,729,593	3,863,226	4,260,003	4,521,873	4,750,791	4,868,271	4,821,270
Railway operating income	Def. 14,690,442	3,531,754	2,860,993	20,539,117	18,698,549	20,509,435	21,386,470	17,359,776
Net equipment and joint facility rents—Dr.	2,303,676	2,369,860	2,216,082	2,218,704	1,626,372	2,978,815	3,333,748	4,399,076
Net railway operating income	Def. 1,319,953	1,161,893	644,911	18,320,413	17,072,177	17,530,619	18,052,723	12,960,700
Dividend income	3,842,942	9,191,700	11,095,150	6,027,537	7,002,537	3,177,537	5,913,995	4,200,702
Gross income	*18,516,983	*16,815,729	11,854,444	23,111,730	24,781,924	21,698,418	24,927,371	18,461,588
Interest on funded debt	10,610,358	10,701,403	10,771,533	10,532,553	11,079,862	10,945,520	10,781,715	11,237,924
Net income	4,438,586	2,694,425	Def. 3,132,770	8,435,273	9,601,629	6,729,307	10,113,393	3,512,650
Sinking and other reserve funds	976,015	1,099,171	946,047	1,217,065	1,238,262	1,146,915	1,368,901	1,378,887
Surplus for year	3,462,570	621,452	Def. 4,078,817	7,218,208	8,363,367	5,582,391	8,744,493	2,133,763
Revenue ton-miles (thousands)	11,137,692	8,574,212	8,277,801	11,363,377	9,880,513	9,469,280	10,407,368	10,161,506
Rev. pass. miles (thousands)	740,129	683,422	648,421	680,537	666,139	672,065	650,594	636,400
Rev. per ton per mile (cents)	0.862	1.065	1.021	0.957	0.966	1.000	0.980	0.982
Total revenue tons	46,467,928	34,692,317	36,301,364	50,437,718	43,104,928	42,894,577	46,680,845	46,846,984
Tonnage of bituminous coal	12,036,731	6,959,744	7,797,689	11,534,424	8,343,217	8,334,899	8,856,584	9,249,752
Per cent of total	25.90	20.06	21.48	22.87	19.36	19.43	18.97	19.74
Tonnage of anthracite coal	9,988,829	9,973,687	6,079,508	11,537,800	10,026,306	7,392,567	10,178,531	9,992,427
Per cent of total	21.50	28.75	16.75	22.91	23.26	17.23	21.80	21.33
Transportation ratio	56.60	46.53	45.46	38.59	38.69	38.52	38.45	39.79
Operating ratio	108.88	93.55	93.66	81.27	80.43	78.65	79.04	81.86

* Includes standard return and guaranty.

motor coaches. Passenger-miles in 1927 were 2.18 per cent less than in 1926 and gross revenues 5.6 per cent less. The greater decline in earnings is due to the fact that the Erie has a large volume of low-rate suburban traffic, which business it has retained, while full-fare passengers have been lost to competing transportation agencies. Passenger train revenues in 1927 were 15.7 per cent of total operating revenues.

The road has large investments in coal properties and its dividend income from all sources in 1927 was \$4,200,702—a decrease of \$1,713,293 from the preceding year. Non-operating income in 1927 totaled \$5,500,888, or 29.8 per cent of gross income. As the net railway operating income continues to grow as a result of improved operating performance, there should be less and less necessity for reliance on dividend income as a source of net income.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended August 18 amounted to 1,056,905 cars, a decrease of 9,923 cars as compared with the corresponding week of last year and a decrease of 24,598 cars as compared with 1926. Loading of grain and grain products, ore and miscellaneous freight, however, showed increases, as did the totals for the Central Western and Southwestern districts. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading

Week Ended Saturday, August 18, 1928

Districts	1928	1927	1926
Eastern	242,561	243,943	249,328
Allegheny	215,455	216,017	217,863
Poconong	55,758	62,951	58,656
Southern	139,521	152,055	149,395
Northwestern	163,752	163,958	168,516
Central Western	158,732	150,572	159,200
Southwestern	81,126	77,332	78,545
Total Western Districts	403,610	391,862	406,261
Total All Roads	1,056,905	1,066,828	1,081,503
Commodities			
Grain and Grain Products	61,170	54,045	50,874
Live Stock	25,521	29,534	29,888
Coal	160,720	173,443	185,721
Coke	9,138	9,390	11,377
Forest Products	66,011	69,931	70,194
Ore	64,228	62,902	75,062
Merchandise L. C. L.	255,832	261,356	260,406
Miscellaneous	414,285	406,227	397,981
August 18	1,056,905	1,066,828	1,081,503
August 11	1,044,442	1,049,639	1,102,660
August 4	1,048,622	1,024,038	1,075,392
July 28	1,033,976	1,044,697	1,095,997
July 21	1,033,816	1,012,585	1,078,193
Cumulative total, 34 weeks	31,550,005	32,575,306	32,740,905

The freight car surplus for the week ended August 15 averaged 241,258 cars, a decrease of 15,954 cars as compared with the previous week. The total included 123,461 box cars, 74,795 coal cars, 21,261 stock cars and 12,734 refrigerator cars.

Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended August 18 totalled 68,731 cars, an increase over the previous week of 2,483 cars and an increase of 5,348 cars over the same week last year.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada		
August 18, 1928	68,731	39,886
August 11, 1928	66,248	38,268
August 4, 1928	68,477	38,380
August 20, 1927	63,383	36,528
Cumulative Totals for Canada		
August 18, 1928	2,136,397	1,285,717
August 20, 1927	2,005,555	1,249,511
August 21, 1926	1,899,711	1,226,121

Santa Fe Authorized to Acquire Orient

WASHINGTON, D. C.

AQUISITION by the Atchison, Topeka & Santa Fe of control of the Kansas City, Mexico & Orient Railway was approved by Division 4 of the Interstate Commerce Commission in a report made public on August 28 which expresses the opinion that the acquisition will be advantageous to the Orient, which has never been able to finance itself, to shippers because of the assurance of a regular, dependable and permanent service, and to the Santa Fe.

The price is \$414.50 a share, or a total of \$14,507,500, or somewhat in excess of the commission's valuations as of 1919 but the report points out that additions and betterments to date would raise the total of the amounts shown in the valuation reports to a sum in excess of the price which the Santa Fe is to pay and that the valuations do not include anything for the properties in Mexico.

The Orient was incorporated on April 1, 1925, for the purpose of effecting a reorganization of the Kansas City, Mexico & Orient Railroad Company, whose properties were in the hands of a receiver. The commission authorized the Orient to acquire and operate the line of railroad formerly of the Kansas City, Mexico & Orient Railroad and of the Kansas City, Mexico & Orient Railway of Texas by purchase of capital stock, to issue not exceeding 35,000 shares of capital stock without nominal or par value and to assume obligation and liability in respect of a note for \$2,500,000 given by the receiver of the Orient to the Secretary of the Treasury.

The Santa Fe owns subscription rights to 14,561 shares of the Orient's capital stock, and proposes to acquire the remaining 20,439 shares, pursuant to a contract entered into with W. T. Kemper on May 19, 1928. The price paid for the subscription rights and to be paid for the stock is \$414.50 a share. The capital stock has no ascertainable market value. The total consideration to be paid for the stock, which represents all the property of the Orient, including cash and current assets sufficient to pay all its debts, is \$14,507,500. The Orient owns all of the bonds of its Texas subsidiary, and 9,840 shares of its 10,000 outstanding shares of stock, with certain rights in other shares held by directors of that company to qualify them as such. The commission valuation for rate-making purposes of the properties of the Orient owned and used and owned but not used, as of June 30, 1919, was \$6,453,528, and the final value for rate-making purposes of the Texas subsidiary, as of the same date, was \$6,744,673. Additions and betterments to date would raise the total of these amounts to a sum in excess of the price which the applicant proposes to pay, the report adds and these valuations do not include any amounts for the 320 miles of line in Mexico.

Construction of the Orient's railroad was commenced in 1902 and most of its existing lines were completed by 1910. Construction was carried on in separate sections and exhaustion of funds resulted in a receivership in 1912. A reorganization was effected in 1914 and a second receivership followed in 1917. The properties have been in receivership since 1912, with the exception of two years.

"The Orient has never been able to finance itself," the report says. "On two, and possibly three, occasions abandonment of the line was seriously threatened."

Operations were continued through special consideration granted by federal and state regulatory and taxing bodies. Since the fiscal year ended June 30, 1914, to and including the calendar year ended December 31, 1923, operation of the lines in the United States resulted in a deficit each year, with the exception of the fiscal years ended June 30, 1915, and June 30, 1916, in neither of which years did net earnings aggregate \$100,000. In 1923 oil was discovered in the Orient's territory, and in 1924 net earnings were \$142,201.96. Since 1924 no year has shown a deficit and each year has shown an increase in gross revenue. This increase was due almost wholly to the transportation of oil and its products, and oil well supplies. These commodities accounted for 47.97 per cent of all freight revenue in 1927. The Orient has no funded debt except a first lien-note to the government for \$2,500,000. It has cash or its equivalent sufficient to offset this obligation. Its current assets equal or exceed its current liabilities. The Mexican lines are self-supporting."

The report also says:

The Orient's line runs through an agricultural and oil country, with but few industries. With the exception of oil and its products, traffic consists principally of products of agriculture and animals. The natural flow of traffic would be from the Orient's lines to those of the applicant, but supplies for oil and other industries in the Orient territory would come from the north and from the Gulf ports. There are 119 towns on the line in the United States, 85 of which are entirely dependent upon it for service.

Competition between the lines of the Orient and the applicant is confined almost entirely to the territory between Wichita, Kans., and Cherokee, Okla., where the two railroads are close together. Not more than 5 per cent of the total Orient traffic is competitive with the applicant's lines. The two roads would be complementary and supplementary to each other. They come in contact eight times, and practically every point of contact creates opportunities by which the applicant could use portions of the Orient's line as a cutoff, and thereby effect savings in distance as high as 285 miles.

Equipment owned by the Orient is valued at \$3,275,422, and includes 75 locomotives, 1,404 freight train cars, 32 passenger train cars, and 403 units of work equipment. The company never has sufficient cars to supply the seasonal requirements of shippers of grain and livestock. It is subject to heavy debit balances for per diem on foreign cars, and for mileage on equipment owned by others. The applicant has a surplus of over 400 light locomotives, many of them of a class for service on the Orient's line. Its car supply would enable it to meet in large part the needs of the Orient.

The Orient is peculiarly dependent upon its revenues from oil and its products. The record does not afford any assurance that operations could be conducted profitably should this source of revenue be lost through the exhaustion of the oil fields. Control by the applicant will provide the Orient an increased power and car supply, and protection in emergencies, and will also effect a reduction of expense by savings in per diem and car mileage charges, and a coordination of traffic and facilities. Shippers now or hereafter dependent upon the Orient for transportation will have the assurance of a regular, dependable, and permanent service.

The Missouri Pacific, the Fort Worth & Denver City, and the Wichita Valley Railway take the position that if the application be granted our order should be so conditioned as to require the applicant to consent to a vacation of the order entered by us in Docket No. 13668, the Orient Divisions Case, with a restoration of divisions more nearly equal those in effect just prior to the entry of our order in that proceeding; and that the present through routes between points on the lines of the Orient and the interveners should not be disturbed. The Humble Oil & Refining Company is a large shipper over the Orient's railroad. On its behalf the view was expressed that the proposed acquisition would be in the public interest, but it fears that control by the applicant may result in an increase in the present export coastwise rate. The New Orleans Joint Traffic Bureau represents that if the application be granted, the discontinuance of the present policy of the Orient and its connections with respect to rate making with the Port of New Orleans should not be permitted. The points raised by the various interveners can

be considered in appropriate proceedings when occasion therefore arises.

The commission's report approving the reorganization plan by which the new Railway company takes over the property of the old Railroad company and that of the Texas company, was made public on the day following that on which the report authorizing control by the Santa Fe was issued, although it is dated August 23. The report includes a description of the properties, the traffic handled, the financial results of operation and a review of the receivership proceedings. Following the review of the earlier proceedings, the report says, with reference to the Santa Fe purchase:

As above indicated, the Santa Fe has acquired all the British noteholders' interests, and there is pending an application of that company, Finance Docket No. 6958, for authority to acquire control of the Orient by purchasing from Kemper all the shares of stock of the Orient that he owns or for which he holds or controls subscription rights.

Owing to the changed conditions arising since the hearing, January 4, 1928, the Orient and the Santa Fe have filed in the proceeding in Finance Docket No. 4826 a statement of agreed facts in which it is stated that, on May 23, 1928, by a decision not yet officially reported, the Circuit Court of Appeals for the Eighth Circuit instructed the District Court to reduce somewhat the compensation theretofore allowed to the receiver and his counsel, that the mandate of the Circuit Court of Appeals has been filed in the District Court, but no order has yet been entered responsive thereto, and that the order when entered would not affect the number of shares of stock to be issued, viz, 35,000, but would merely result in a reduction in the subscription price per share, which was fixed by the court's order of July 6, 1927, at \$71.61.

On May 19, 1928, the Santa Fe contracted with Kemper to purchase, subject to our approval, the stock of the Orient or subscription rights thereto owned or controlled by him. The acquisition of Kemper's stock, including a few additional shares since included in that contract, together with the rights already acquired from the British noteholders, would give the Santa Fe ownership of the entire capital stock of the Orient proposed to be issued and would merge in the Santa Fe all interests heretofore opposed to each other.

The Santa Fe states that upon the approval of its application to acquire control of the Orient, the mandate of the Circuit Court of Appeals will be spread of record immediately, an agreed decree entered by the District Court, and thus all controversies as to the compensation and allowances to the receiver and his counsel will be eliminated. Furthermore, upon obtaining such authority, the Santa Fe will arrange to have dismissed with prejudice the suit of the original interveners filed on or about November 1, 1927, and designated Consolidated Cause in Equity No. 239N. Pending the obtaining of authority to acquire control of the Orient, the Santa Fe, as successor to the interests of the British noteholders, will preserve its rights in the judicial proceedings above mentioned.

It appears, therefore, that upon the Santa Fe's being granted authority to acquire stock of the Orient owned or controlled by Kemper, all litigation herein referred to will cease and the Santa Fe will be entitled to have issued to it the entire 35,000 shares of stock of the Orient. Our order will require that none of the stock herein authorized shall be issued by the Orient until 10 days after the filing with us of (1) a certified copy of the decree of the United States District Court for the District of Kansas entered pursuant to the mandate of the Circuit Court of Appeals for the Eighth Circuit in respect of the compensation to be allowed to the receiver and his counsel, and (2) a certified copy of the order dismissing the petition of the original interveners filed on or about November 1, 1927, in said District Court, designated Consolidated Cause in Equity No. 239N. Nothing herein contained shall be construed as authorizing the Santa Fe to acquire control of the Orient by purchase of the capital stock of that company or subscription rights thereto, owned or controlled by Kemper.

AIRPLANE FACILITATES BRIDGE LOCATING. The Southern Pacific employed an airplane to secure data preliminary to the design of a bridge over Suisun Bay near Goodyear, Cal. C. R. Harding, engineer of standards, flew over the proposed site in a trimotored Fokker plane at elevations ranging from 200 ft. to more than 5,000 ft. studying the topography. "From the plane," Mr. Harding said, "it was possible to get a more comprehensive view of the site than otherwise could be possible. Bars and obstructions under water could be seen with ease and the results of this inspection are of undoubted value."

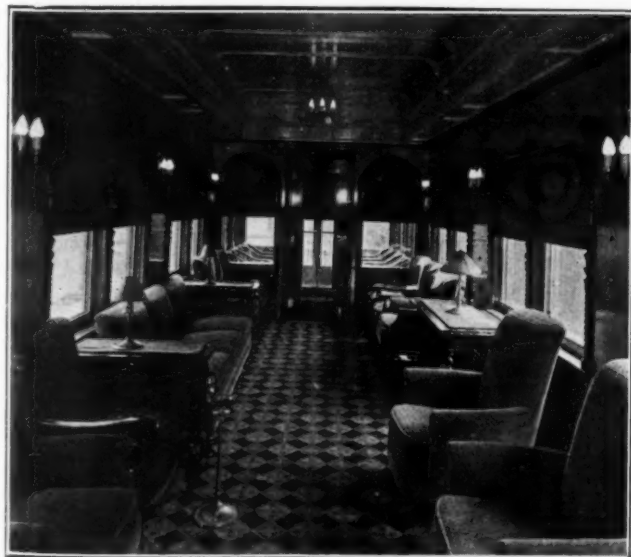
Two North Western Passenger Trains Newly Equipped

Fifty-one additional roller bearing cars acquired—Designed to provide the last word in travel luxury, comfort and safety

ON August 20, the Chicago & North Western placed in service in its North Western Limited (operating between Chicago and St. Paul-Minneapolis, Minn.) and in its newly-christened Corn King Limited (operating between Chicago and Omaha-Sioux City, Nebr.), a total of 51 all-steel passenger cars, equipped with Melcher-Hyatt roller-bearings and containing such recent innovations in passenger-carrying equipment as one-bed bedrooms, glass-enclosed observation parlor and solarium, soda water fountain and luncheonette, Frigidaire ice cube machine, revolving coach seats, electric cigar lighters, etc. This additional equipment includes 34 new sleeping cars, built by the Pullman Car & Manufacturing Corporation, and 17 Chicago & North Western cars, completely rebuilt at the Chicago shops of that company. The latter equipment consists of four lounge cars, four diners, six coaches, two combination coach-smoker-baggage cars, and one observation-lounge-diner.

Observation Platform Is Enclosed

The rear Pullman in each of the trains contains a solarium, an observation parlor, and six single bedrooms. The windows of the enclosed observation platform are of special glass which admits the ultra-violet rays of the sun. The solarium is equipped with eight reed chairs having leather cushions. An attempt is made to produce a homelike atmosphere in the observation parlor of this car. This is obtained by harmonious variety in the upholstering of the chairs, by the richly-carved wood around the windows and mirrors, by the figured tapestry window shades, the low-placed lights and the parchment shaded lamps. There is also a spacious writing desk with individual lamp and a telephone which



Observation Parlor and Solarium



Coach Equipped with Revolving Type, High Back, Individual Seats

is in service up to the time of departure. Further along in this car is a lounge for ladies, attractively decorated and furnished with deeply upholstered chairs and a mirrored console table.

Single Bedrooms Completely Furnished

The six single bedrooms, which open off the corridor, may be used singly or en suite. The full-length beds contain box springs and hair mattresses. In one corner of each room is located a chair, the back of which folds down, revealing a completely-equipped washstand. The chair-seat covers a flush-toilet. There is a cheval-glass in the door and an oval mirror in the wall, illuminated by parchment-shaded lights at the side. A drop-leaf table on the wall can be raised to form a desk. On the wall is a marine clock with illuminated dial. Next to the window is a carafe with ice water. At the foot of the bed is an individual heat control lever. A ventilator is located above the window and another below the mirror on the door. Within easy reach of the bed is a small non-glaring night light; underneath the bed is a servidor for shoes, so placed that the porter can secure them without disturbing the occupant.

The interior of the six-compartment, three-drawing-room Pullman, provided in each train, is decorated with walnut paneling in the corridor and soft tones of tans in the rooms. The upholstering varies in pattern and color in each compartment and drawing-room. The rooms in this car also are so arranged that they may be used singly or en suite. There is a wardrobe in each compartment, added space for clothes in each drawing room and a wall cabinet for toilet articles above the

porcelain lavatory. The other fittings throughout the car are similar to those in the bedroom car.

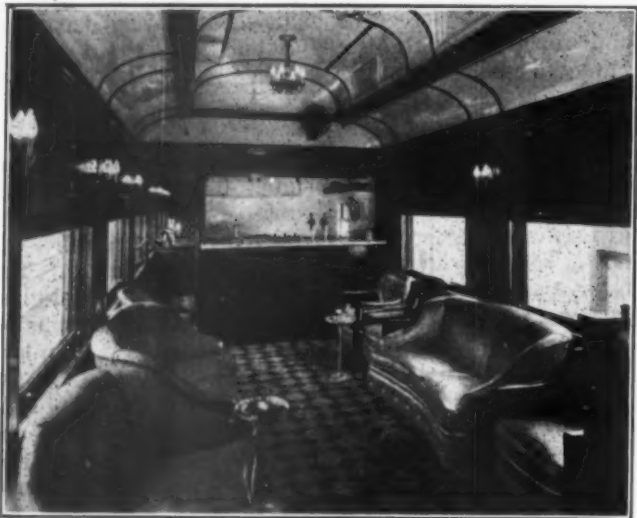
Soda Fountain in Club-Lounge Car

The club-lounge car in each train is divided at the center by a soda fountain and luncheonette, provided with toaster and coffee urn. At one end of the car a



Women's Room in One End of Lounge Car

partition segregates a portion of the room for the use of women passengers. Two plush-upholstered curved sofas and two chairs, also a serving table and suitable smoking stands, are furnished in this section. The balance of the lounge room is upholstered in blue leather. Chairs of different heights, shapes and tilts offer a wide choice of seats which may be moved around in groups. Smoking stands, electric cigar lighters, oval card tables and divans



Soda Water Fountain and Luncheonette in Club Lounge Car

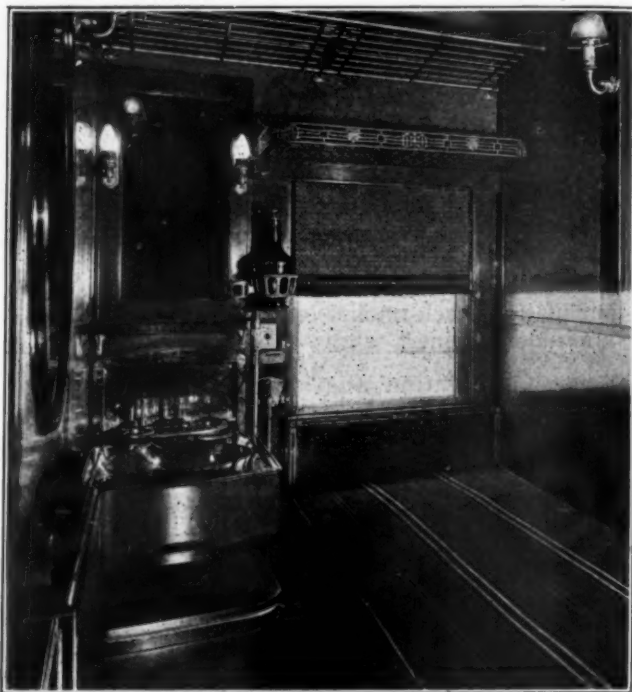
are placed where they will be most convenient. "Pull-up chairs" and tables are included in the furnishings. The air is kept clear and fresh by an adequate ventilating system.

In the washrooms of the standard sleepers are porcelain wash-basins. Soap foam in containers replaces the liquid soap. The dressing rooms for ladies have swivel chairs before the dressing tables and porcelain lavatories.

American walnut is used as the decoration through the main part of these cars. The permanent walnut head-boards of each section form the basis for a series of arches overhead and make a semi-compartment of each section. In the center of each arch and on each end partition is a parchment-shaded light. The berths are equipped with a new type of cushion mattress in which are incorporated hair padding and coil springs. All windows are equipped with brass sash which is dust proof and which facilitates the movement of the window. Special ventilators are included in all windows.

Coach Seats Are of Semi-Swivel Type

The new style coaches are said to be the first revolving type seat cars to be used in the West. The high-back seats are of the semi-swivel type and are upholstered in soft plush with double spring cushions. The arm rests, which separate the double seats, may be dropped when



Individual Bedroom in Observation Sleeper

desired. An added convenience is the coat rack on the back of each seat. At one end of the car there is a large smoking compartment. Paper towels and soap are provided in the lavatories. All drinking water ice is made on the dining cars by Frigidaire ice cube machines.

"CROSS CROSSINGS CAUTIOUSLY" is an injunction which, in America, is enforced by all the arts of rhetoric and picture-making which railroad specialists can muster; but in South Africa, the science of the safety doctor is supplemented by the strong arm of the courts. In a recent case at Natal, the driver of a steam wagon persisted in his attempt to cross a railroad in spite of repeated warnings, and he was prosecuted and fined £10, with the alternate of a month's imprisonment. The engineman of the train succeeded in slackening his speed so that there was no actual collision. In another case, at Capetown, a motor car was driven into a train at a crossing, where a flagman's signals were ignored, and the driver was fined £5. In the Cape Province, a youth 18 years of age, acknowledging that he had not kept a good lookout for trains, was fined £3, and, in addition, his wagon suffered serious damage.

Hale Holden to Become Chairman of Southern Pacific

William Sproule to retire as president on January 1 and be succeeded by Paul Shoup, now executive vice-president

HALE Holden, now president of the Chicago, Burlington & Quincy, will succeed Henry W. de Forest as chairman of the executive committee of the Southern Pacific Company, with headquarters in New York, on January 1, when Mr. de Forest will become chairman of the board. At the same time Paul Shoup, now executive vice-president, will succeed William Sproule as president of the Pacific system of the Southern Pacific, with headquarters in San Francisco.

The announcement of these approaching changes was made in New York by A. D. McDonald, vice-chair-

was appointed general attorney of this road, with headquarters at Chicago. During the three years that he served in that capacity he represented the railroad in some of the most important cases heard by the Interstate Commerce Commission, including the Missouri river rate case and the Pacific coast lumber rate case. One of the most important railroad cases ever passed upon by the Supreme Court of the United States was the famous Minnesota rate case. It involved both the question of railroad valuation and that of the authority of the United States government to nullify state



Henry W. de Forest



Hale Holden

man of the Southern Pacific, on August 25. In his new position Mr. Holden will have general control of all the business of the Southern Pacific Company, while Mr. de Forest will handle matters pertaining to consolidations and finance.

Mr. Holden has had an unusually distinguished career in the railroad industry. He already had a high reputation as a lawyer before he became an executive officer. His opinions upon broad questions of railroad policy long have had great weight with his fellow executives, and they have conferred numerous honors upon him, including his selection to serve for a time as chairman of the Association of Railway Executives.

Mr. Holden was born on August 11, 1869, at Kansas City, Mo. He graduated from Williams College in 1890 and from Harvard Law School in 1893. He immediately began the practice of law in Kansas City, and for a number of years was a member of the law firm of Warner, Dean, McLeod & Holden, who were local attorneys for the Burlington. In July, 1907, he

regulation that interfered with interstate commerce. The ability with which Mr. Holden represented the Hill lines in this litigation made an impression upon James J. Hill that had great influence upon Mr. Holden's subsequent career. In January, 1910, he was made assistant to the president of the Burlington and in November, 1912, was elected vice-president and a director.

Two years later, in August, 1914, he was elected president of the Burlington and the Colorado & Southern. The rapidity with which he attained a position of unusual influence and prominence among the railway executives of the country is illustrated by the fact that when in August, 1916, the railways were threatened with a nation-wide strike in their "basic eight-hour-day" controversy with their train service employees, Mr. Holden was chosen to preside over the conferences held by the railway presidents in Washington and to serve as chairman of the committee of executives who presented the side of the railroads to President Wilson.

When this country entered the World War in the spring of 1917, and the railroads organized the Railroads' War Board to unify their operations as a single continental system, Mr. Holden was selected as one of the five members of this board. Upon the adoption of government operation at the beginning of 1918 he was invited by Director General McAdoo to take charge of the operating organization of the Railroad Administration, but declined. In June, 1918, he resigned as president of the Burlington, and soon afterward was appointed regional director of the Central Western Region of the Railroad Administration.

He resumed his position as president of the Burlington and the Colorado & Southern on February 15, 1920, just before the return of the railroads to private operation. From December, 1922, to December, 1924, he was chairman of the executive committee of the Association of Railway Executives.

Mr. Holden's management of the Burlington has been highly successful. He became president of it when the railways were still enjoying large increases in both their passenger and freight business but were also beginning to feel the effects of restrictive regulation, but



Paul Shoup

prior to the war the Burlington under his management constantly increased not only its operating efficiency but also its prosperity. The period since the war has been a much more difficult one for the railways in western trunk line territory, in which most of the Burlington's mileage is situated. Their passenger business has declined, their freight traffic has been almost stationary and their freight rates have been lower than the average in the west. Nevertheless, the Burlington, owing to the skill with which the physical property has been developed and to efficient operation, has been able to produce remarkably good financial results. Its annual net operating income has averaged higher since government control than in an equal period before.

As chairman of the executive committee of the Southern Pacific Company, Mr. Holden will be the chief executive officer of the largest railroad system conducted by a single management in the west, and one which, together with its steamship lines and other properties, constitutes one of the greatest transportation systems in the world.

Henry W. de Forest

Mr. de Forest has been the executive head of the Southern Pacific since the retirement of Julius Kruttschnitt in 1925. He has long been a prominent lawyer and capitalist in New York and a director in many companies. He was born on October 29, 1855, in New York and is a graduate of both Yale and Columbia Universities, from which latter institution he holds his law degree, which he received in 1878. Immediately thereafter he began the practice of law in New York and has continued since, remaining still a member of the law firm of de Forest Brothers.

His legal and financial work led him into association with various companies, particularly railways, and in 1906 he became a director and a member of the executive committee of the Southern Pacific Company. In 1916 he was elected also a vice-president. He continued in both capacities until, upon the retirement of Mr. Kruttschnitt in 1925, because of his long and active connection with the corporate activities of the company and his close association with Mr. Kruttschnitt in the executive committee, he was chosen as executive



William Sproule

head of the company, with headquarters at New York.

Mr. de Forest is a director and a member of the executive committee of the Illinois Central, and a director of the American Railway Express Company, the Western Union Telegraph Company and several other railways and financial institutions.

William Sproule

With his retirement at the end of the year, William Sproule, president of the Southern Pacific Company will terminate a successful career in the transportation business extending over a period of more than 46 years. He has been an officer of the Southern Pacific for more than 40 years and its president 17 years, and has thus played a very important part in its development. He served it during the period when it was under the control of Collis P. Huntington, during the later period when it was under the control of E. H. Harriman, and during the subsequent period, during most of which its chief executive was Julius Kruttschnitt. After having demonstrated that he was one

of the ablest traffic men in the country, he has established for himself a place in the foremost rank of railway executives.

Mr. Sproule was born in Ireland in 1853 and came to New York when a boy. He first engaged in the mercantile business in California. He entered the service of the Southern Pacific as a freight clerk in 1882. From 1887 to 1897 he was assistant general freight agent of the Pacific System. In the latter year he was promoted to general freight agent and the next year to general traffic manager.

He left railway service in 1906 to become traffic manager, a director and a member of the executive committee of the American Smelting & Refining Company. During 1910 and 1911 he was president of Wells Fargo & Company. In the latter year he returned to the Southern Pacific as president.

During the part of the war when the operation of the railways was being directed by the Railroads' War Board he acted as chairman of the Western department of this board. Under government operation he was district director of the Central Western Region of the United States Railroad Administration from July, 1918 to January 1, 1920. On the latter date he resumed his position as president of the Southern Pacific Company. He will have the satisfaction of leaving the property, after his long service as president, in probably the best condition in almost every respect that it has been in.

Paul Shoup

Paul Shoup will become president of the Southern Pacific with an unusually varied railroad experience, in spite of the fact that he will perhaps be the first president of an important railroad serving the Pacific coast who was born and has spent all his life there.

He was born at San Bernardino, Calif., in 1874. His first railway service was in the mechanical department of the Atchison, Topeka & Santa Fe in his home town in 1891. Later in the same year he became a ticket clerk of the Southern Pacific, and during the following 19 years served in the operating and traffic departments at various points as telegrapher, agent, and assistant to the general passenger agent.

In 1910 he became assistant general manager in charge of the electrified lines of the Southern Pacific with headquarters at San Francisco. Two years later he was elected president of the Pacific Electric Company with headquarters at Los Angeles, although retaining charge of the Southern Pacific's electrified properties at Fresno, Stockton, San Jose and Oakland.

He has been president of the Pacific Electric ever since. In 1918 he became vice president of the Southern Pacific and in May, 1925, executive vice president. He has been president also of the subsidiary companies owning the Southern Pacific's extensive oil properties, and vice-president of the Northwestern Pacific, of which the Southern Pacific is one of the owners.

It is hardly necessary to say that, holding the various positions he has, Mr. Shoup has been for years one of the busiest and hardest-working men on the Pacific coast. Nevertheless, he always has been accessible to anybody who has had business with him, and it is doubtful if there is any man on the Pacific coast who has a wider acquaintanceship or more loyal friends. Although he is quiet and even retiring in his manner, his personality attracts everyone who comes in contact with him.

While he has been in railroad service for 37 years, and it has been 16 years since he was elected president of the Pacific Electric, Mr. Shoup is now only 54 years

old. A native son of California, one who knows the Pacific coast as few men do, and with an unusually broad experience as a business man and railway officer, it has long been expected that he would succeed Mr. Sproule when the latter should decide to retire; and few men ever assumed the presidency of a railroad with a better equipment for the performance of its duties than Mr. Shoup possesses.

Agreement Reached on Western Wage Dispute

WASHINGTON, D. C.

AN agreement on a plan of settlement of the wage dispute between the western railways and the brotherhoods of trainmen and conductors, on which the latter have been taking a strike vote, was signed on August 28 by J. W. Higgins as chairman of the Conference Committee of Managers of the Western Railways, E. P. Curtis, president of the Order of Railway Conductors and A. F. Whitney, president of the Brotherhood of Railroad Trainmen, after several days of informal conferences here with members of the United States Board of Mediation. Although the details of the agreement were not made public and it is subject to ratification by committees of the brotherhoods, it is hoped that it will terminate the dispute.

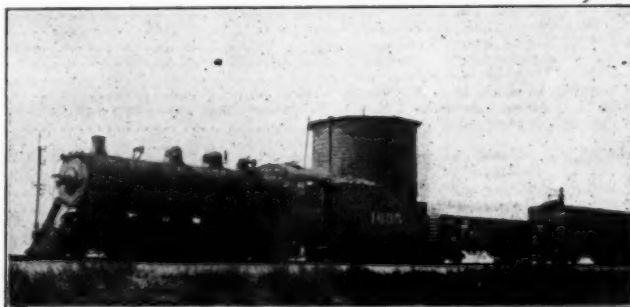
Announcement that an agreement had been reached was made by Samuel E. Winslow, chairman of the Board of Mediation, as follows:

"An agreement has been reached by the Executive Officers of the Order of Railway Conductors and the Brotherhood of Railroad Trainmen and the Railroads of the Western Territory, whereby settlement has been made of the dispute between them, involving rates of pay and certain rules.

"The final approval of the agreement is subject to the ratification by the Associations of General Committees of the Western Territory. When so approved the agreement becomes in force. Should such approval be denied by the employee Associations of General Committees of the Western Territory, the dispute will continue to exist as heretofore and will have to be treated in accordance with law. Meanwhile the employee organizations have agreed to a provision insuring the President and the Board of Mediation a reasonable opportunity to proceed under the law, so far as the calling of a strike is concerned, before any further action has been initiated on the part of the employees."

The railways had offered the employees either an advance of 6½ per cent in wages or an advance of 7½ per cent if they would agree to the elimination of certain restrictive rules.

* * *



Just North of Mattoon, Ill., on the I. C.

Freight Commodity Statistics

WASHINGTON, D. C.

THE Interstate Commerce Commission on August 29 made public the first statistical statement resulting from its order of November 22, 1927, which required the Class I and Class II railways to render reports concerning commodities carried from and after January 1, 1928, in greater detail than had been theretofore required. The former 70 classes were expanded to 157 classes, and the tonnage terminating and the freight revenue were also called for in the new order.

The tons originated in the first quarter of 1928, by Class I roads, according to the statement compiled by the Bureau of Statistics, aggregated 273,584,670, a decrease of 8.78 per cent as compared with the corresponding quarter of 1927. Products of mines showed the largest reduction, 16.73 per cent.

The statement gives the figures by regions and for the United States, the latter as shown in the accompanying table.

Freight Traffic Originated, Freight Traffic Terminated, Total Tonnage Carried, and Freight Revenue, by Classes of Commodities and Regions, First Quarter, 1928*

(TONS OF 2,000 POUNDS)

No.	Commodity group or class	UNITED STATES (ALL REGIONS) ^a					
		Revenue freight originated		Revenue freight terminated		Total tons of revenue freight carried (incl. duplications)	Freight revenue (dollars)
		Number of carloads	Number of tons	Number of carloads	Number of tons		
GROUP I. Products of Agriculture (C. L.)							
10	Wheat	108,522	4,508,081	120,753	5,065,721	6,638,258	18,760,648
20	Corn	153,827	5,906,580	164,616	6,267,029	8,984,130	22,360,037
30	Oats	50,098	1,487,061	56,166	1,667,637	2,662,305	5,381,939
40	Barley and Rye	18,432	700,965	21,307	812,470	1,234,447	2,892,822
41	Rice	10,903	286,393	10,308	274,910	444,689	1,369,141
42	Grain, N. O. S.	1,488	39,513	1,850	50,500	84,898	184,370
50	Flour, wheat	92,816	2,286,637	99,909	2,472,308	5,271,554	11,020,041
51	Meal, corn	3,168	66,710	3,861	80,169	145,506	282,131
52	Flour and meal, edible, N. O. S.	10,797	255,997	14,702	359,995	865,392	1,535,902
60	Cereal food preparations, edible, N. O. S.	11,679	225,299	12,491	244,596	510,519	1,263,581
61	Mill products, N. O. S.	115,723	2,529,883	131,752	2,894,257	5,142,105	9,122,856
70	Hay and alfalfa	77,007	979,179	81,252	1,037,136	1,948,382	5,462,047
71	Straw	8,690	112,629	9,319	121,703	186,351	434,896
80	Tobacco leaf	22,490	233,396	22,599	240,104	402,853	1,839,684
90	Cotton in bales	48,929	592,469	52,845	599,429	1,496,820	7,003,341
91	Cotton linters, noils, and regins	6,637	98,868	6,782	103,850	292,763	956,248
100	Cottonseed	15,804	366,062	16,709	386,333	496,732	1,015,107
101	Cottonseed meal and cake	32,262	735,940	32,178	734,257	1,349,375	2,825,820
110	Oranges and grapefruit	27,689	433,359	27,810	438,342	1,751,675	11,993,518
111	Lemons, limes, and citrus fruits, N. O. S.	2,018	29,962	2,673	39,445	150,864	904,459
120	Apples, fresh	15,998	256,802	17,770	284,290	769,620	4,616,975
121	Bananas	18,542	195,009	19,335	205,617	406,139	3,240,380
122	Berries, fresh	397	4,633	392	4,813	15,408	125,383
123	Cantaloupes and melons, N. O. S.	15	176	27	358	1,218	7,583
124	Grapes, fresh	98	1,298	189	2,644	9,804	59,527
125	Peaches, fresh	16	214	49	1,311	2,258	5,194
126	Watermelons	14	182	14	185	1,095	4,352
127	Fruits, fresh, domestic, N. O. S.	1,447	19,949	1,691	24,033	61,890	378,515
128	Fruits, fresh, tropical, N. O. S.	289	4,354	414	7,102	13,872	53,329
130	Potatoes, other than sweet	65,934	1,210,025	77,682	1,450,209	4,148,960	14,606,239
140	Cabbage	11,251	143,973	14,054	181,622	527,539	2,452,704
141	Onions	9,212	121,966	10,147	133,944	307,917	1,217,984
142	Tomatoes	1,156	12,820	2,828	35,784	119,932	784,214
143	Vegetables, fresh, N. O. S.	44,299	497,229	52,179	596,249	2,243,424	15,193,247
150	Beans and peas, dried	8,334	191,995	9,469	219,601	531,411	2,090,060
151	Fruits, dried or evaporated	6,392	172,340	6,652	177,291	340,314	1,738,868
160	Vegetables, dry, N. O. S.	5,936	75,583	7,327	97,403	206,016	932,471
161	Vegetable-oil cake and meal, except cottonseed	5,291	126,261	5,655	135,216	204,897	421,245
162	Peanuts	6,192	94,080	5,816	88,121	206,343	911,996
162	Flaxseed	2,103	80,245	2,168	82,499	109,783	325,528
163	Sugar beets	4,042	184,946	4,063	184,762	207,106	119,771
164	Products of agriculture, N. O. S.	34,444	723,608	37,579	786,617	1,473,244	5,124,890
[800]	Total Products of Agriculture	1,060,381	25,992,671	1,165,382	28,589,862	51,967,808	161,011,243
GROUP II. Animals and Products (C. L.)							
170	Horses, mules, ponies, and asses	19,053	222,159	19,232	224,896	359,879	2,032,293
180	Cattle and calves, single-deck	141,821	1,631,500	147,905	1,709,174	2,250,025	9,532,983
181	Calves, double-deck	968	11,689	1,399	17,412	23,301	131,391
190	Sheep and goats, single-deck	8,974	75,534	9,038	77,518	104,398	441,799
191	Sheep and goats, double-deck	14,534	161,132	15,690	173,299	262,636	1,079,967
200	Hogs, single-deck	160,984	1,474,059	162,372	1,486,159	1,794,793	8,353,777
201	Hogs, double-deck	38,955	479,557	45,417	557,377	808,013	4,458,533
210	Fresh meats, N. O. S.	62,494	788,504	61,607	772,254	1,796,188	10,924,757
220	Meats, cured, dried, or smoked	10,745	160,281	12,078	183,632	407,285	2,367,289
221	Butterine and margarine	1,113	14,107	1,164	15,114	28,214	191,589
222	Packing-house products, edible, N. O. S., not including canned meats	24,418	409,119	24,096	397,916	895,806	4,327,572
230	Poultry, live	4,052	39,850	5,153	50,732	148,328	1,382,618
231	Poultry, dressed	3,843	46,478	4,478	54,400	150,683	1,328,405
240	Eggs	12,002	133,658	13,254	150,269	409,508	3,949,838
250	Butter	9,094	111,324	10,336	127,355	307,849	2,572,368
251	Cheese	3,740	47,620	3,920	49,618	111,704	825,112
260	Wool	6,614	71,228	6,836	73,468	150,861	695,568
270	Hides, green	9,234	196,674	9,382	201,816	455,131	1,773,505
271	Leather	3,345	56,277	3,696	62,226	159,732	569,267
280	Fish or sea-animal oil	1,033	26,706	1,204	30,932	69,957	219,095
281	Animals, live, N. O. S.	845	9,846	821	10,367	22,243	95,334
282	Animal products, N. O. S. (other than fertilizers and fertilizer materials)	19,244	384,565	20,454	416,411	707,992	2,948,416
[810]	Total Animals and Products	557,105	6,551,867	579,532	6,842,345	11,424,526	60,201,476
GROUP III. Products of Mines (C. L.)							
290	Anthracite coal	304,903	15,279,172	294,043	14,681,777	25,024,838	35,847,667
300	Bituminous coal	1,662,395	87,636,815	1,525,490	79,154,486	175,855,284	202,861,602
310	Coke	123,607	4,182,361	125,129	4,253,290	7,101,742	9,157,670
320	Iron ore	24,856	1,379,465	45,299	2,732,826	3,747,087	2,817,808
330	Copper ore and concentrates	25,251	1,398,481	38,461	2,257,791	2,325,414	538,887
331	Lead ore and concentrates	6,112	320,671	5,716	284,861	503,015	436,588
332	Zinc ore and concentrates	7,040	322,230	9,805	451,253	920,427	1,169,129
333	Ores and concentrates, N. O. S.	15,747	827,292	16,085	843,612	1,707,229	2,020,234
350	Gravel and sand (other than glass or molding)	192,531	9,913,640	189,423	9,747,265	13,054,216	9,143,664

No.	Commodity group or class	UNITED STATES (ALL REGIONS)					
		Revenue freight originated		Revenue freight terminated		Total tons of revenue freight carried (incl. duplications)	Freight revenue (dollars)
		Number of carloads	Number of tons	Number of carloads	Number of tons		
351	Stone, broken, ground, or crushed	87,486	4,517,918	88,981	4,587,671	5,813,092	4,273,786
352	Stone, rough, N. O. S.	27,441	1,290,852	24,839	1,145,316	1,885,521	1,983,353
353	Stone, finished, N. O. S.	7,355	282,105	8,331	305,578	660,104	1,124,369
360	Petroleum, crude	51,471	1,763,646	39,837	1,343,935	3,749,518	7,885,017
370	Asphalt (natural, by-product, or petroleum)	11,640	395,966	12,788	433,108	899,484	1,783,216
380	Salt	26,438	756,379	32,377	938,842	1,929,502	3,783,556
390	Phosphate rock, crude (ground or not ground)	25,163	1,155,570	18,332	823,720	1,456,104	1,851,691
391	Sulphur (brimstone)	7,004	361,189	10,212	514,115	855,811	1,273,925
392	Products of mines, N. O. S.	130,051	6,351,310	137,668	6,789,134	10,298,476	10,638,627
[820]	Total Products of Mines	2,736,491	138,135,062	2,622,816	131,288,580	257,786,864	298,590,789
	GROUP IV. Products of forests (C. L.)						
400	Logs	246,352	7,964,582	254,158	8,195,735	8,724,676	5,583,770
401	Posts, poles, and piling	40,728	1,186,130	46,038	1,343,950	2,241,922	4,606,109
402	Wood (fuel)	36,206	1,029,680	35,857	1,024,813	1,171,908	1,024,400
410	Ties, railroad	38,609	1,222,635	31,424	978,438	2,057,963	3,728,461
420	Pulp wood	79,739	2,668,498	106,547	3,431,027	5,015,177	4,985,838
430	Lumber, shingles, and lath	340,956	9,253,330	398,639	10,762,429	24,440,558	58,841,773
431	Box, crate, and cooperage materials	29,385	696,380	31,329	732,818	1,528,052	4,091,789
432	Veneer and built-up wood	2,683	58,424	2,457	52,365	125,475	399,313
440	Rosin	4,153	82,157	4,851	96,654	199,750	443,300
441	Turpentine	607	13,292	641	13,702	42,188	137,357
442	Crude rubber (not reclaimed)	4,391	113,481	4,379	114,175	287,042	967,927
443	Products of forests, N. O. S.	26,017	545,617	28,021	587,122	927,673	1,774,460
[830]	Total Products of forests	849,826	24,834,206	944,341	27,333,228	46,762,384	86,584,497
	GROUP V. Manufactures and Miscellaneous (C. L.)						
450	Petroleum oils, refined, and all other gasolines	309,367	8,727,409	329,227	9,313,173	18,075,843	52,090,474
451	Fuel, road, and petroleum residual oils, N. O. S.	84,166	2,840,428	81,105	2,714,214	4,617,692	11,228,924
452	Lubricating oils and greases	34,952	760,526	33,545	725,614	1,554,643	4,713,723
453	Petroleum products, N. O. S.	2,931	74,901	2,741	71,412	140,072	380,274
460	Cottonseed oil	8,375	247,573	8,584	253,858	502,136	1,642,233
461	Linseed oil	2,634	68,096	2,827	72,546	140,970	475,622
462	Vegetable oils, N. O. S.	3,272	93,963	3,124	87,041	230,898	810,122
470	Sugar (beet or cane)	28,706	815,887	34,953	958,737	1,878,399	6,697,309
471	Table sirups and edible molasses	8,669	238,972	9,360	260,402	549,577	1,769,978
472	Molasses, blackstrap, and beet residual	3,753	162,536	3,510	150,673	279,152	758,490
490	Iron, pig	37,538	2,009,066	36,774	1,970,319	2,934,243	3,460,122
491	Iron and steel, rated 6th class in official classification, N. O. S.	23,233	1,164,041	23,920	1,191,323	1,905,151	2,180,575
500	Rails, fastenings, frogs, and switches	16,584	714,572	13,532	582,628	1,387,129	2,392,785
510	Cast-iron pipe and fittings	17,215	426,119	16,499	411,558	1,053,665	2,728,824
511	Iron and steel pipe and fittings, N. O. S.	35,422	1,093,790	37,334	1,132,429	2,945,203	9,609,931
512	Iron and steel: Nails and wire, not woven	17,412	452,128	16,639	408,351	877,528	2,531,575
513	Iron and steel, rated 5th class in official classification, N. O. S. (also tin andterne plate)	231,763	7,887,628	238,664	7,911,365	14,258,049	32,787,180
520	Copper: Ingot, matte, and pig	5,485	231,561	4,880	194,386	723,050	1,755,883
521	Copper, brass, and bronze: Bar, sheet, and pipe	3,241	82,239	4,153	122,410	231,480	641,089
522	Lead and zinc: Ingot, pig, or bar	7,625	303,920	10,165	406,525	1,054,252	2,279,118
523	Aluminum: Ingot, pig, or slab	799	21,205	1,029	29,083	58,142	248,048
530	Machinery and boilers	46,863	848,852	46,565	821,781	1,935,659	8,127,744
540	Cement, natural or Portland (building)	93,529	3,432,623	100,159	3,656,102	6,395,029	9,910,840
550	Brick, common	44,367	1,647,892	46,795	1,746,144	2,683,160	3,335,023
551	Brick, N. O. S., and building tile	56,277	2,018,200	53,595	1,920,006	3,496,476	5,561,089
552	Artificial stone, N. O. S.	3,913	112,162	4,150	118,827	208,710	408,671
560	Lime, common (quick or slaked)	28,076	644,281	30,649	712,412	1,253,945	2,184,021
561	Plaster (stucco or wall) and dry kalsomine	20,196	555,270	20,541	571,297	1,175,599	2,249,721
570	Sewer pipe and drain tile (not metal)	26,130	463,914	25,850	459,866	830,097	1,704,104
580	Agricultural implements and parts, N. O. S.	27,879	408,991	28,749	423,125	818,591	4,598,376
581	Vehicles, horse-drawn, and parts, N. O. S.	1,550	22,548	1,634	23,057	49,836	248,209
582	Tractors and parts	8,318	113,222	8,539	117,249	249,220	1,514,417
583	Railway car wheels, axles, and trucks	3,465	98,648	3,144	93,476	186,741	489,260
590	Automobiles (passenger)	159,707	956,377	164,711	997,723	2,790,950	32,437,527
591	Autotrucks	5,546	50,114	6,070	54,134	126,643	1,136,496
592	Automobiles and autotrucks, K. D. and parts, N. O. S.	51,598	841,358	58,053	916,407	2,026,323	8,856,522
593	Automobile and autotruck tires	11,491	163,158	14,037	185,560	471,027	2,575,806
610	Furniture, metal	4,355	53,230	4,464	53,994	120,978	614,059
611	Furniture, other than metal	25,402	203,899	28,253	225,466	550,823	3,822,908
620	Beverages	8,347	170,979	8,406	169,965	289,386	1,025,380
630	Ice	26,925	790,022	26,179	779,348	878,275	829,051
640	Fertilizers, N. O. S.	183,241	4,731,818	175,960	4,553,089	7,139,457	13,147,683
650	Newsprint paper	14,405	354,844	32,611	807,938	1,874,631	3,920,346
651	Printing paper, N. O. S.	19,497	460,267	19,464	460,171	1,024,891	2,686,006
660	Alcohol, denatured or wood	3,144	70,311	3,195	70,362	160,989	484,511
661	Sulphuric acid	11,789	538,184	11,789	535,199	793,910	1,386,609
662	Explosives, N. O. S.	4,729	76,386	4,636	75,179	167,319	1,329,833
670	Cotton cloth and cotton fabrics, N. O. S.	13,510	131,904	13,716	136,563	375,487	1,695,168
671	Bagging and bags, burlap, gunny, or jute	4,976	86,486	4,930	89,759	181,265	706,583
680	Canned food products, N. O. S.	48,362	1,095,150	51,139	1,166,915	2,597,780	10,373,253
690	Tobacco, manufactured products	2,890	50,958	2,815	52,299	130,264	827,732
691	Paints in oil and varnishes	5,431	114,096	5,986	128,944	249,755	1,043,557
692	Furnace slag	27,175	1,415,218	23,683	1,229,694	1,766,352	1,110,160
693	Scrap iron and scrap steel	65,456	2,594,506	66,587	2,627,154	4,007,506	5,334,381
694	Paper bags and wrapping paper	16,044	355,772	16,797	372,330	857,664	2,303,929
695	Paperboard, pulpboard, and wallboard (paper)	24,078	528,348	24,799	548,249	1,115,618	2,668,637
696	Building paper and prepared roofing materials	18,285	411,130	18,029	402,378	802,902	2,147,281
697	Building woodwork (millwork)	7,359	134,919	6,996	128,512	373,496	1,404,691
698	Soap and washing compounds	12,731	266,262	13,061	270,911	525,357	1,987,631
699	Glass, flat, other than plate	3,765	110,775	3,451	91,986	232,624	814,502
700	Glass: Bottles, jars, and jelly glasses	15,719	285,104	15,189	274,035	610,399	1,894,019
701	Manufactures and miscellaneous, N. O. S.	626,050	13,420,319	650,604	13,999,951	27,228,336	81,682,305
[840]	Total Manufactures and Miscellaneous	2,665,712	69,245,057	2,758,545	71,035,604	134,150,744	371,778,329
[850]	Grand Total, Carload Traffic	7,869,515	264,758,863	8,070,616	265,089,619	502,092,326	978,166,334
	GROUP VI. L. C. L. Freight						
710	All L. C. L. freight		8,825,807		8,893,289	15,128,390	120,790,364
[860]	Grand Total, Carload and L. C. L. Traffic		273,584,670		273,982,908	517,220,716	1,098,957,954

* Each railway reports the traffic originating on its line, subdivided into (1) that terminating on its line and (2) that delivered to connecting carriers. Similarly, the traffic received from connections is subdivided into (3) traffic terminating on respondent's line and (4) traffic delivered to connections. When summarized by regions, the totals do not have the same significance for the region as do the corresponding figures for the individual road. Thus item (4), traffic received from and delivered to connections, would, for the individual road, be the traffic passing over the road and neither originated nor terminated by it; but when totaled for all the roads in a region, this item (4) would not give the traffic which passes through the region, because some of the traffic reported by one carrier as delivered to a connecting carrier may be terminated by that connecting carrier in the same region. In the summary by regions the returns have been compiled in a way that seems most significant for a regional comparison.

† Reverse item. Represents net balance after adjustment for traffic movements occurring in a previous quarter.

‡ Returns for Clinchfield Railroad not received in time for inclusion.

Crossing Gates Replaced by Flashing-Light Signals

Number of automobile accidents reduced with decided saving in operating costs on the Indianapolis Union railway

By T. R. Ratcliff

Engineer Maintenance of Way, Indianapolis Union Railway, Indianapolis, Ind.



Highway Crossing Signals Protecting Main Tracks and Wye Connection at East 21st Street and the Belt Railroad

THE Indianapolis Union railway, which operates the Indianapolis Union station and the Indianapolis Belt railroad, has recently completed the installation of flashing-light crossing signals for the protection of street traffic at 17 crossings where flagmen were formerly used, and to replace gates at 6 crossings. This type of signal was also installed at four street crossings that previously had no protection. These signals have reduced the number of accidents, and have made possible a saving in operating expense that will pay for the improvement in three years.

The tracks at the Union station are elevated above all streets, but the Belt railroad, which forms almost a complete loop about two and one-half miles outside the main business center of the city, has 62 street crossings at grade. Six of these crossings were formerly protected with gates and 20 were protected with flagmen. No change was made at three of the streets protected by flagmen because the street traffic was light, and signals could not be operated from track circuits or grouped with other streets to effect a saving in operating expenses. Five of the streets protected with gates carry heavy street traffic while the railroad traffic approximates 125 to 175 freight trains each 24 hours. Five of the street crossings protected by flagmen have equally heavy street and railway traffic, and frequently it was difficult and dangerous for flagmen to protect the traffic at these points.

In the two years and four months ending March 17, 1927, there were 210 crossing accidents at the six streets protected by gates, 195 of these accidents being caused by automobile drivers running into gates, resulting in damage to gates or the automobile. During this same

period, there were 46 accidents at all other street crossings on the Belt railroad.

In order to improve these conditions, authority was requested from the Board of Safety of the City of Indianapolis to make a test installation of flashing lights, with a S-T-O-P sign and bell on each side of the tracks, at the crossing of Madison avenue with the Belt railroad, to take the place of the flagmen used heretofore for protecting that crossing. The railway traffic at this point consists of about 175 freight train movements each 24 hours while the street traffic over this crossing is among the heaviest on the Belt railroad. The Board of Safety, after making an investigation, issued authority to install these signals to replace the crossing flagmen, with the understanding that if the signals were not satisfactory, they would be removed and the flagmen restored. The switching movements at this crossing make it impossible to operate these signals from track circuits so they are operated manually from a tower so located that the operator could readily observe both street and railway traffic.

These signals were placed in service on July 28, 1927, and about one month later, authority was requested from the Board of Safety to install similar signals to replace flagmen at 16 other crossings. The board was so well pleased with the results obtained with the signals at Madison avenue that this additional authority was readily granted. Before any of these 16 signals were installed, further authority was requested from the Board of Safety to install this same type of signal to replace the six sets of crossing gates mentioned above, and although the entire personnel of the board had changed since the previous request, all of the new members of the board were so familiar with the results at Madison avenue, that authority was quickly granted. These signals were installed and placed in service on July 13, 1928.



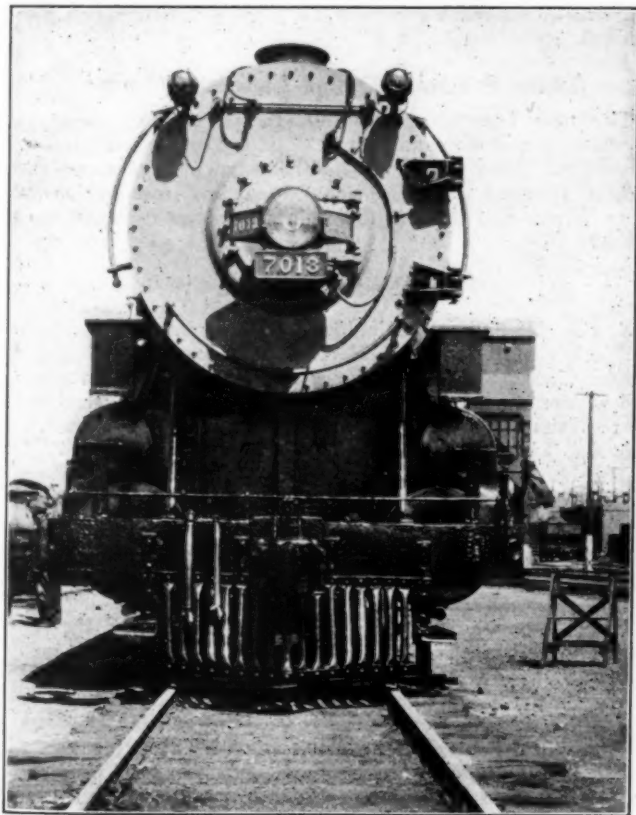
Shelby Street Crossing of the Belt Railroad After Gates Were Replaced with Flashing-Light Signals

The signals at 23 of these crossings are operated manually because the switching movements make it impossible to operate them from track circuits. At two crossings, the signals are operated manually during the eight-hour period in which switching is done at the industries near these crossings, and from track circuits insofar as all through train movements are involved. The signals at the remaining two crossings are operated from track circuits at all times. Where the conditions permit, the manually-operated signals at two or more street crossings are arranged for operation from one central point, with the result that one man is required at each of 13 towers. The signals are in operation 24 hours a day, which, together with the three crossings protected by flagmen, requires a total of 44 men, as compared with 64 men formerly required for flagging the 20 crossings and operating the 6 sets of crossing gates. This reduction in the number of men results in a saving of \$15,984 a year in wages. This saving, less the cost of maintaining these signals, will pay for the entire signal installation in three years.

The two red lights on the brackets of the signal flash alternately at the rate of 30 times a minute. The flasher relay which controls this operation also causes two bells, one on the signals on each side of the tracks, to ring alternately, which makes a less objectionable warning than the continuous ringing of both bells, or of a single bell, particularly to those residing near the crossing. The vertical sign reading "Stop" is illuminated continuously when the signal is in operation.

Normally the signal lamps operate on 10-volt, alternating current, but in case of failure of the a-c. power, they are connected to the storage batteries which operate the flasher relays. The signals, relays and control equipment were furnished by the Union Switch & Signal Company and were installed by railroad forces.

* * *



Front View of Missouri Pacific Locomotive

Looking Backward

Fifty Years Ago

The lines composing the routes from Chicago and St. Louis to Texas held a meeting in Chicago recently and fixed first class passenger rates at 4 cents per mile and emigrant rates at 2 1/4 cents per mile.—*Railway Age*, August 29, 1878.

The Denver & Rio Grande has been the first to test the applicability of the Westinghouse air brake to freight trains. On a 4 per cent grade in La Veta pass on August 8, a train of 12 cars weighing 207.5 tons was stopped in a distance of 704 ft. in 33 seconds from a speed of 25 miles per hour. The altitude at this pass is 9,257 ft. above sea level and the air is such that the pumps have to compress it through nine-thirtieths of the stroke before it has been reduced to the density of air at sea level.—*Railway Age*, August 29, 1878.

The conference of 60 railway managers that convened at Saratoga, N. Y., on August 20, included nearly every large road doing an east and west business. The meeting, which was made up of a large number of presidents and vice-presidents, recommended the discontinuance of the practice of allowing commissions on the sale of tickets. The meeting also made the statement that reasonable and uniform rates can only be maintained by an equitable division of the traffic between competing roads and agreed to form a pooling arrangement for the division of eastbound business.—*Railway Age*, August 29, 1878.

Twenty-Five Years Ago

The Baltimore & Ohio has under construction a Mallet articulated locomotive for use in helper service, which will be about 10 per cent heavier on driving wheels and several tons heavier in total weight than any locomotive built, with a total weight of 270,000 lb. The largest engine heretofore constructed was a Decapod for the Atchison, Topeka & Santa Fe.—*Railway Age*, September 4, 1878.

Perhaps the most notable and questionable feature in the bill of the Canadian ministry for the construction of the Grand Trunk Pacific is the requirement that the tracks of the whole transcontinental line shall be open to the trains of all roads desiring to use them. Similar suggestions for government railroad construction have been made in this country with little encouragement, and in Canada the former minister of railways resigned because he could not endorse this phase of the plan.—*Railway Age*, September 4, 1903.

Ten Years Ago

F. L. Thompson, assistant chief engineer of the Illinois Central, has been promoted to chief engineer, with headquarters at Chicago.—*Railway Age*, August 30, 1918.

The Interstate Commerce Commission, in a decision issued on August 22, held that the allowance paid by railroads for the use of privately-owned tank cars should be increased from 3/4 cent to 1 cent per mile for loaded and empty movements. This increase will also apply to privately owned live poultry cars, palace stock cars and heater cars.—*Railway Age*, August 30, 1918.

An increase in operating expenses of \$46,694,818 in the first six months of 1918, over the same period of 1917, and an increase in the operating ratio from 71.34 to 87.23 per cent are the features of the summary of earnings of Class I railroads issued by the Interstate Commerce Commission on August 24. The net income was only \$151,657,111 in 1918, as against \$440,050,413 in the first six months of last year.—*Railway Age*, August 30, 1918.

Books & Letters

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian,
Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

American Architecture, By Fiske Kimball. Grand Central and Pennsylvania Stations, New York, are accorded their place among our great structures, p. 183. 228 p. Pub. by Bobbs, Merrill, Indianapolis, Ind., \$4.

A Brief Analysis and History of the Kansas City, Mexico & Orient Railway, by John Leeds Kerr. 4 p. Pub. by Railway Research Society, New York City, Apply.

Labor Policies of the National Association of Manufacturers, by Albion Guilford Taylor. "Railroad Labor Board" p. 142-143. Pub. by University of Illinois, Urbana, Ill., \$1.50.

Periodical Articles

British Influence on American Locomotive Design. As exemplified in the Baltimore and Ohio's "President Cleveland." Illustrations and diagrams. Modern Transport, August 11, 1928, p. 3-4.

What Will the Mississippi Bills Do For The South? A compilation of opinion, including one from a railroad executive, regarding the flood, control and barge operation extension bills. The Magazine of Business, August 1928, p. 149-150, 176.

A Communication

Traffic and Purchases

TO THE EDITOR:

Allow me to congratulate you on the article which appeared in the August 4 issue of *Railway Age*, pages 207 and 208, on "Using Traffic to Influence Purchases."

Anything you can do toward influencing the stopping of this practice will, I know, be greatly appreciated by the manufacturing concerns of the country whose product is exclusively railway supplies. We come under this latter classification and, as a consequence, have very little option in the routing of our traffic. Railroads do not give much consideration to material which is to be used on their own lines. As a consequence, we have been forced, in self defense, to use, to some extent, the traffic of another company, which is very closely affiliated with ours. We do not approve of this, however, and, as stated, only do it in self-defense and will be only too glad to see the entire practice stopped. In our case, in spite of the proved superiority of our product, there are many railroads that will not listen to such an argument in placing of orders, but will only consider traffic.

It occurs to us there is another phase to this matter which you have not brought out in your article; this is the internal friction in the organizations of the railroads themselves. We have discussed this situation many times with purchasing officials and find, especially amongst the more efficient, a decided resentment at being told by the traffic officials where to place orders. This class of purchasing officials almost universally feel the traffic department should secure results without leaning on the purchasing department.

Supplementing the illustrations given in your article, we have in mind one large mail order house which, until the appointment of a former railroad official as the head of this house, never did anything in the railway supply business. Immediately after this appointment, this mail order house began soliciting orders for various kinds of railway material, and using its enormous traffic to secure the orders it was after.

MANUFACTURER.

Odds & Ends

Henry Palmeri, a laborer on the Pennsylvania, has an interesting avocation. During the time that he is not developing muscle driving spikes and handling rails, he is the captain and outstanding star of the Elmira, N. Y., high school track team.

It must be admitted that the European sleeping car company has a much more grandiose name than the Pullman Company. It takes a long car to hold: "Compagnie Internationale Des Wagon-Lits et Des Grands Express Europeans."

Not to be outdone by male railway athletes, Dorothy Tedford, stenographer in the division freight agent's office, Missouri Pacific, East St. Louis, Ill., went out and collected a few championships for herself. She won the national Y. W. C. A. archery tournament and finished second in the Missouri Valley championship. She is rated among the ten best women bow-and-arrow shots in the country.

Because motor coaches have supplanted railroad coaches for funerals, the New York Central has converted the last of its funeral coaches into a maintenance of way department boarding car. This road once had three funeral coaches which were frequently utilized. These were equipped with a compartment for the coffin and seats for the mourners. One became an eye test car in 1917, while a year later the second became another boarding car.

A correspondent sends in the following safety suggestion, which, he maintains, is worthy of a Harriman Award: "It has been repeatedly suggested that the number of deaths in rear-end collisions could be greatly decreased by leaving off the rear car, but I have a suggestion of even greater value. Statistics compiled from newspaper reports of accidents in which passenger trains are involved show that in 92.7 per cent of all accidents, at least one of the trains concerned is a 'crack' train. If 'crack' trains could be abolished it is a demonstrated fact that all but 7.3 per cent of the present accidents could be avoided."

Texas & Pacific Opens Lancaster Yards

The new Lancaster Yards of the Texas & Pacific at Tremble, 3 miles west of Fort Worth, Tex., were formally opened on June 12. This new construction removes the freight terminal from the congested business section of Fort Worth and enables the railroad to classify 3,000 cars a day.

Safety and Service

Mrs. L. M. Fulks, Huntington, W. Va., points with pride to her family of railroaders. Her five sons have been employed by the Chesapeake & Ohio for a combined total of 46 years, and without a personal injury to any of them. All are employed on the Huntington division. S. E. Fulks, 14 years' service, is traveling fireman, W. W. Fulks, 11 years' service, and Z. C. Fulks, 10 years' service, are engineers, H. J. Fulks, 2 years' service, is a fireman and D. K. Fulks, 9 years' service, is a conductor.

Harsh Words These!

Coincident with a relapse in British railway stocks, the railways were criticized in the House of Lords for inefficient management. Lord Montagu of Beaulieu spoke of a "new spirit needed in the board room." Lord Monkswell, himself a practical locomotive engineer, described a large railway system as a "subsidized home for the feeble-minded," asserting that to concede to the railways the right of conducting road passenger and freight transport by motor vehicles merely meant extending the railways' "slackness and inefficiency" to the highways. Politicians seem to talk about railways in much the same way all over the world.

NEWS of the WEEK



Maine Central, No. 29, Leaving Portland, Me.

DAN JACKSON of Chicago has been appointed as a member of the Illinois Commerce Commission, succeeding Edward H. Wright, resigned.

THE RAILWAY CLUB OF PITTSBURGH will hold its next meeting on Thursday evening, September 27, with a paper by H. B. Greenwald, U. S. Bureau of Mines, on safety problems in coal mining.

THE CENTRAL RAILWAY CLUB will hold its next meeting at Hotel Statler, Buffalo, on September 13. Pictures illustrating a trip around the world will be shown by the Canadian Pacific. This will be the annual Ladies' night, with entertainment and dancing.

A JUDGMENT of \$38,250 has been paid to Willard Ewan of Kansas City, Mo., by the St. Louis-San Francisco as damages for injuries received when he fell from a coal car on September 17, 1924 at a mine near Arcadia, Kan., where he was employed as a weigher. The car was being shunted by gravity from the mine to a Frisco siding when Ewan fell, losing both feet. The amount paid by the railroad, following an appeal to the United States district court, did not include interest charges of \$5,833.

THE WESTERN REGION of the Pennsylvania will hold its annual regional athletic meet at Indianapolis, Ind., on September 8 at which time individuals will be chosen to represent the Western region in the system sport carnival to be held at Altoona, Pa., on September 15. The western region program will include all track and field events, track and rifle shooting, horse shoes, quoits and swimming, tennis and golf. The closing event at Indianapolis will consist of a baseball game between the Columbus, Ohio, baseball team, champions of the Western region, and the Pitcairn, Pa., team, champions of the Central region, in the semi-finals for the Pennsylvania championship.

Wadley Southern Abandonment

The Wadley Southern, Dublin, Ga., has discontinued train service from Kite, Ga., southward to Rockledge, 22 miles, and the track between these places will

be dismantled. This leaves in operation the line from Wadley southward to Kite, 15 miles, on which, according to the Official Guide, there is one mixed train each way daily. On this company's line from Wadley southeastward to Collins, 53 miles, the timetable shows one passenger train each way daily, and also a highway motor coach each way, once a day, between Wadley and Swainsboro, 20 miles.

Los Angeles Duplicating Bureau

Offices of the Southern Pacific in Los Angeles, Cal., now have a central duplicating bureau where all reproducing facilities previously scattered among the various departments have been centralized, taking in also the work of the Pacific Electric Railway. The operating traffic and accounting departments, by thus centralizing forces, effect important economies. The bureau will handle schapirograph, mimeograph, multigraph and addressograph work, as well as record shaving and paper cutting. It will have dark-room facilities for photographic work.

Timbers 102 Ft. Long Shipped Across Country

Thirteen timbers, each 102 ft. long were shipped by the Marsh & Truman Lumber Company from Kelso, Wash., on August 8, to Parkersburg, W. Va., where they arrived on August 28, to be used in the construction of a dredge for the Kanawha

Sand Company. The timbers, which were 18 in. thick, were transported on three flat cars and were handled by the Union Pacific from Kelso to Council Bluffs, Ia., the Chicago & North Western to West Chicago, Ill., the Elgin, Joliet & Eastern to McCool, Ind., and the Baltimore & Ohio to Parkersburg.

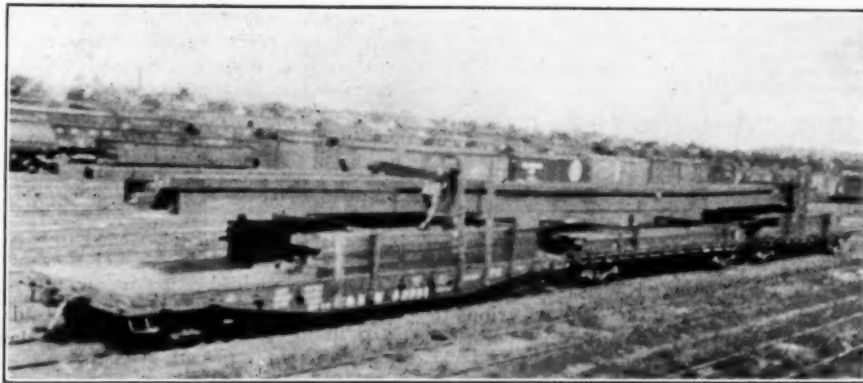
Signal Section Meeting at Atlantic City

The eighty-third stated meeting of the Signal Section of the American Railway Association will be held at the Ambassador Hotel, Atlantic City, N. J., on September 11-13. Among the speakers announced for the meeting are R. H. Aish-ton, president, A. R. A.; E. H. DeGroot, Jr., director of the bureau of signals and train control devices, I. C. C., and P. T. White, general superintendent, C. C. C. & St. L.

Committee No. 6 will present a large number of new and revised specifications, with drawings. Other committees will present reports on the value of remote power switch machines; on steel taped cable for use in place of wood trunking, and on highway crossing signals. Four chapters of the proposed book on signaling principles and practices will be presented for discussion.

A Compendium on Valuation

A digest relative to federal valuation of steam railroads in the United States,



Timbers Loaded on Three Flat Cars for Movement Across the Country

covering work extending from the date of the Valuation act, 1913, to June 28, 1928, has been prepared by L. D. McPherson, formerly valuation attorney of the Wabash, from testimony and exhibits presented before the Interstate Commerce Commission. It includes appearances before the commission on behalf of protesting carriers, the commission, state railway commissions, organizations having interests adverse to the carriers and debates, recommendations and resolutions of committees organized on behalf of the railroads. All material relates to issues arising in proceedings under Section 19a or Section 15a of the Transportation Act of 1920. The digest consists of 10 volumes which are devoted to investment accounts, eight volumes devoted to the commission's inventory instructions and one volume describing the source of the text material and containing an index and bibliography.

Tool Foremen's Convention

The following program has been developed for the 16th annual convention of the American Railway Tool Foremen's Association to be held at the Hotel Sherman, Chicago, on September 12 to 14, inclusive:

WEDNESDAY, SEPTEMBER 12

Meeting called to order at 9:30 a.m.
Invocation by Rev. Orvis F. Jordan.
Opening address "Car Shop Tools," by P. Kass, superintendent of the car department, Chicago, Rock Island & Pacific, Chicago.
Address by President E. A. Greame, tool foreman, Delaware, Lackawanna & Western.
Report of secretary-treasurer, G. G. Macina, Chicago, Milwaukee, St. Paul & Pacific, Chicago.
Appointment of committees.
Unfinished and new business.
Adjournment.
Meeting called to order at 2:00 p.m.
Report of Committee on Proper Heat Treatment of Steel, Chairman H. L. Taylor, supervisor of shop machinery and tools, Baltimore & Ohio, Baltimore, Md.
Adjournment.

THURSDAY, SEPTEMBER 13

Meeting called to order at 9:30 a.m.
Address by D. C. Curtis, chief purchasing officer, Chicago, Milwaukee, St. Paul & Pacific, Chicago.
Response by E. J. McKernan, supervisor of tools, Atchison, Topeka & Santa Fe, Topeka, Kans.
Report of Committee on Standardization of Boiler Tools, Chairman A. A. Ferguson, supervisor of tools, Missouri Pacific, St. Louis, Mo.
Report of Committee on Jigs and Devices for the Locomotive Shop, Chairman W. R. Millican, tool foreman, Missouri-Kansas-Texas, Parsons, Kans.
Election of officers.
Adjournment.
Special visit to exhibits.

FRIDAY, SEPTEMBER 14

Meeting called to order at 9:30 a.m.
Report of Committee on Rake and Clearance of Machine Tools, Chairman J. E. Carroll, supervisor of tools, Chesapeake & Ohio, Huntington, W. Va.
Report of Standardization committee.
Report of special committees.
Selection of place for next convention.
Convention adjournment.

U. S. Chamber to Study Transportation

The United States Chamber of Commerce has appointed a railroad committee under the chairmanship of Director C. W. Lonsdale of Kansas City, Mo., to consider and report on the various problems of railway regulation, including the Railway Labor Act, the Hoch-Smith resolution, and proposals for the modification of Section 15A of the Transportation Act of 1920. The committee will hold its first meeting at Chicago in September. In

addition to Director Lonsdale, the members of the committee, as at present constituted, are A. R. Currie, vice-president of the Ryan Fruit Company, Seattle, Wash.; William J. Dean, president of Nicols, Dean & Gregg, St. Paul, Minn.; F. C. Dillard, an attorney at Sherman, Tex.; Samuel O. Dunn, editor of the *Railway Age*; Edward J. Frost, vice-president of William Filene's Sons, Boston, Mass.; R. C. Fulbright, attorney, Houston, Tex.; A. L. Humphrey, president of the Westinghouse Air Brake Company, Pittsburgh, Pa.; Dr. Emory R. Johnson, Dean of the Wharton School of Finance and Commerce of the University of Pennsylvania, Philadelphia, Pa.; J. F. Reed, president of the Minnesota Farm Bureau, Minneapolis, Minn.; William P. Sidley of Cutting, Moore & Sidley, Chicago.; R. S. Stubbs, vice-president of the American Sugar Refining Company, New York; and Ezra J. Warner, president of Sprague, Warner & Company, Chicago.

C. N. R. Does Well in July

Increases in both gross and net earnings were shown by the Canadian National in July of this year; also substantial increases in gross receipts and net earnings for the seven months of this year.

The statement for July, 1928, shows that the gross earnings amounted to \$23,291,805 as against \$20,599,324 for July, 1927, an increase of 13.07 per cent, or \$2,692,480.29.

The operating expenses in July last amounted to \$19,673,357 as against \$18,289,014 in July, 1927, an increase of 7.57 per cent or \$1,384,343.

The net earnings for July last therefore, amounted to \$3,618,447 as compared with \$2,310,310, an increase of 56.62 per cent, or \$1,308,137.

As a result the operating ratio for July last was reduced to 84.46 per cent.

For the seven-month period beginning January 1, 1928, the gross earnings of the National System reached a total of \$146,505,331, which compare with \$135,037,007 in the similar seven-month period of 1927, an increase during the current year of \$11,468,323, equivalent to 8.49 per cent.

In the seven months of the present year, the operating expenses amounted to \$123,016,507 as against \$116,836,789 in the first seven months of 1927.

The net earnings for the first seven months of 1928 amounted to \$23,488,823 which compares with \$17,200,218 for the similar seven month period of 1927, an increase of \$5,288,605, or 29.06 per cent.

The operating ratio for the first seven months of the current year has been reduced to 83.97 from 86.52 in the similar seven-month period of 1927.

R. I. Athletic Meet

Several hundred employees of the Chicago, Rock Island & Pacific participated in the fifth annual athletic tournament of that railroad held at Moline, Ill., on August 25, and witnessed by approximately 5,000 persons. Encouragement was given the event by the pres-

ence of J. E. Gorman, president; L. C. Fritch and Carl Nyquist, vice-presidents, and H. S. Ray, director of personnel and public relations.

The civic organizations of Moline, Rock Island, Davenport, East Moline, Silvis and Bettendorf acted as hosts to the visiting railroad men, cooperating with the railway officers in the various committee work preparatory to the tournament and providing for the comfort of the visitors. Congressmen F. Dickinson Letts acted as referee for the field events and the men who officiated during the athletic contests came from the various colleges and athletic organizations in that territory.

In addition to the field meet, nine other major events were staged in Moline, Rock Island and Davenport. These included golf, trap shooting, tennis, horseshoe pitching, etc. Music for the events was furnished by the Rock Island shop bands from Silvis; Trenton, Mo.; and Horton, Kan.

The day's activities were brought to a close with a banquet at the government cafe at the Rock Island Arsenal, the building being turned over to the railway men during the evening by Colonel David King, commandant. The prizes awarded at the dinner included cups given by Mr. Gorman, Charles Hayden, chairman of the board of directors, and E. N. Brown, chairman of the executive committee. The Gorman trophy went to the Illinois division; the Hayden trophy to the First district; and the Brown trophy to John Warrington, a car repair helper of Estherville, Ia., who was judged the best all-around athlete.

Program for the Roadmasters' Convention

The Roadmasters and Maintenance of Way Association will hold its forty-sixth annual convention at the Book-Cadillac hotel, Detroit, Mich., on September 18-20, at which time the following program will be presented:

TUESDAY MORNING, SEPTEMBER 18

10:00 a.m. Convention called to order.
10:10 a.m. Opening address: C. G. Bowker, general manager, Grand Trunk Western, Detroit, Mich.
10:30 a.m. President's address: J. P. Davis, engineer maintenance of way, Central Indiana, Anderson, Ind.
10:50 a.m. Appointment of committees.
11:00 a.m. Report of committee. The Care of Winter-Laid Rail; M. J. Nugent, assistant engineer, Delaware & Hudson, Albany, N. Y., chairman.

TUESDAY AFTERNOON

2:00 p.m. Report of committee: The Programming of Section Work; J. J. Desmond, roadmaster, Chicago Terminal Division, Illinois Central, Chicago, chairman.
3:00 p.m. Address: Permanent Track Construction on the Pere Marquette, Paul Chipman, valuation engineer, Pere Marquette, Detroit, Mich.
4:00 p.m. Adjournment to visit exhibit of the Track Supply Association.

TUESDAY EVENING

8:00 p.m. Safety in Track Work. Moving Pictures. Address: C. E. Hill, general safety agent, New York Central, New York City.

WEDNESDAY MORNING, SEPTEMBER 19

9:30 a.m. Report of committee: The Conservation of Revenue-Earning Equipment in the Handling of Maintenance of Way Materials; R. H. Smith, division superintendent, N. & W., Roanoke, Va., chairman.
10:30 a.m. Address: The Problem of Maintaining a High-Speed Railway; J. F. Deimling, chief engineer, Michigan Central, Detroit, Mich.

WEDNESDAY AFTERNOON

- 2:00 p.m. Report of committee: Methods of Preventing and Overcoming Damage to Rail Ends; C. F. Allen, division engineer, Chicago, Milwaukee, St. Paul & Pacific, Milwaukee, Wis., chairman.
- 3:00 p.m. Address: Notes on the Manufacture and Service of Rails; C. B. Bronson, assistant inspecting engineer, New York Central Lines, New York City.
- 4:00 p.m. Adjournment to visit exhibit of the Track Supply Association.

WEDNESDAY EVENING

- 6:30 p.m. Annual banquet given by the Track Supply Association to the members of the Roadmasters' Association and their families.
- Addresses by prominent railway officers.

THURSDAY MORNING, SEPTEMBER 20

- 9:30 a.m. Report of committee: The Organization of Track Forces; A. A. Johnson, track engineer, Delaware, Lackawanna & Western, Hoboken, N. J., chairman.
- 10:30 a.m. Closing business.

Disastrous Wreck in New York Subway

A derailment on the Interborough Rapid Transit subway line at Times Square, Manhattan, New York City, on the afternoon of Friday, August 24, completely wrecking one car, and due to a misplaced switch, resulted in the death of 15 or more passengers and the injury of over 100; and of the injured a number are still in a critical condition.

A southbound express train of ten cars, on the express track, which had just started from the station at Times Square, Forty-second street, about 5:09 p.m., ran over a misplaced or defective facing point switch less than 100 ft. from the station platform, and the rear truck of the ninth car in the train was diverted to a cross-over so that the body of the car carried along at an angle of 20 or 30 degrees from the line of the main track, was crushed against a vertical partition separating the main track from a storage track at the left, and the car body, of heavy steel construction, was virtually broken in two. The car was packed full of passengers and most or all of the serious casualties occurred in this car. The tenth car followed it into the cross-over. The train had attained a speed of probably 20 miles an hour.

In the normal course of operations, this train would have been emptied at the Times Square station and run through the cross-over to be returned northward, but because of some difficulty with the switch (electro-pneumatic interlocking) leading to the cross-over, the signalman had held the train at the station for about five minutes pending an investigation by the maintainer. At the end of the five minutes, the maintainer, and his helper, who were at the switch, gave word for the train to proceed along the main line; and this movement appears to have been carried out, as intended, so far as concerns the first eight cars.

Investigations by the Interborough Company and by the state and city authorities have thus far made nothing public as to just what was the matter with the switch; or whether the movement of the switch under the train was caused by some wrong action on the part of the maintainer.

Central Oregon Railroad Hearing

Representatives of the Great Northern, the Northern Pacific, the Oregon Short Line, the Oregon-Washington Rail-

road & Navigation Company and the Southern Pacific presented testimony in opposition to the construction of a railroad across central Oregon at an Interstate Commerce Commission hearing before Frank McManamy, commissioner, and Examiner Rogers, which opened at Portland, Ore., on August 4. During the course of the hearing, on August 21, a number of witnesses estimated the cost of construction between Crane or Burns and Crescent Lake at about \$11,000,000.

George W. Boschke, chief engineer of the Southern Pacific, pointed out that operation of that railroad's line now under construction between Klamath Falls, Ore., and Alturas, Cal., would be profitable only with the support of through traffic from western Oregon to the East. Four executives of Oregon lumber companies on August 24 declared that they foresaw no benefits to the lumber industry from the proposed railroad. They expressed entire satisfaction with the service now provided by existing railroads.

H. F. Wiggins, rate expert, and J. P. Newell, consulting engineer of the Oregon Public Service Commission introduced revised estimates of potential traffic that would move from San Francisco, Cal., to points east of Crane, Ore., from southern Idaho to California and from Alkali Lake, a fertilizer deposit in Central Oregon. Estimated rates of return on the investment were for the first year of operation, 17 per cent; second year, 19.2 per cent; third year, 21.5 per cent, fourth year, 9.3 per cent; fifth year, 10.4 per cent. These figures were refuted by C. E. Day, cost accountant for the Southern Pacific, who thought the estimates too high. He believed that the rate of return on an investment of \$9,908,000 could not be more than 1.3 per cent for the first year and 3.9 per cent for the second. Mr. Newell concluded his testimony with the statement that any arrangement whereby the proposed cross state line can be assured of one half of the traffic which might otherwise be carried over the Southern Pacific via Alturas would justify an order by the I. C. C. for its construction.

A representative of the Willamette Valley Lumbermen's association, comprising 32 lumber manufacturers, said that the new road could expect shipments of 200 cars of lumber per day over its line eastbound. Federal policies are designed to provide uninterrupted production from national forests in Oregon, W. F. Ramsdell, assistant chief of forest management for the United States Forest Service, testified. The Umpqua national forest would provide at least 40,000,000 ft. of lumber annually for the next 100 years, he said.

Meetings and Conventions

The following list gives names of secretaries, date of next or regular meetings and places of meetings.

AIR-BRAKE ASSOCIATION.—T. L. Burton, 165 Broadway, New York City. Next meeting, April 30-May 3, 1929, Stevens Hotel, Chicago. Exhibit by Air Brake Appliance Association.

AIR BRAKE APPLIANCE ASSOCIATION.—Fred Venton, Crane Company, 836 So. Michigan B'ldg., Chicago. Meets with Air Brake Association.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—J. D. Gowin, 112 W. Adams St., Chicago. Annual meeting, September 22, 1928, French Lick, Ind.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Dubcan, 332 S. Michigan Ave., Chicago. Next meeting, June 25, 1929, Denver, Col.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York. Annual meeting, September 25-26, 1928, Hotel Broadmoor, Colorado Springs, Colo.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—J. Rothschild, Room 400, Union Station, St. Louis, Mo. Next annual convention, June, 1929, Mexico City.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—L. M. Jones, Supt. of Sleeping and Dining Cars, C. M. St., P. & P., Chicago. Annual meeting, October, 1928, Havana, Cuba.

AMERICAN ELECTRIC RAILWAY ASSOCIATION.—J. W. Welsh, 292 Madison Ave., New York. Annual convention, Sept. 22-28, Cleveland Public Auditorium, Cleveland, Ohio.

AMERICAN RAILROAD MASTER TINNERS' COPPER-SMITHS' AND PIPE FITTERS' ASSOCIATION.—C. Borchardt, 202 North Hamlin Ave., Chicago.

AMERICAN RAILWAY ASSOCIATION.—H. J. Forster, 30 Vesey St., New York, N. Y. Division I.—Operating—J. C. Caviston, 30 Vesey St., New York.

Freight Station Section (including former activities of American Association of Freight Agents)—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago. Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York.

Protective Section (including former activities of the American Railway Chief Special Agents and Chiefs of Police Association)—J. C. Caviston, 30 Vesey St., New York.

Safety Section.—J. C. Caviston, 30 Vesey St., New York. Annual meeting April 23-25, 1929, Indianapolis, Ind.

Telegraph and Telephone Section (including former activities of the Association of Railroad Telegraph Superintendents)—W. A. Fairbanks, 30 Vesey St., New York. Next meeting, Sept. 18-20, 1928, St. Francis Hotel, San Francisco.

Division II.—Transportation (including former activities of the Association of Transportation and Car Accounting Officers)—G. W. Covert, 431 South Dearborn St., Chicago.

Division III.—Traffic, J. Gottschalk, 143 Liberty St., New York.

Division IV.—Engineering, E. H. Fritch, 431 South Dearborn St., Chicago, Ill. Annual convention, March 5-7, 1929, Chicago. Exhibit by National Railway Appliances Association.

Construction and Maintenance Section.—E. H. Fritch.

Electrical Section.—E. H. Fritch. Signal Section (including former activities of the Railway Signal Association)—H. S. Balliet, 30 Vesey St., New York. Stated meeting, Sept. 11-13, Ambassador Hotel, Atlantic City, N. J.

Division V.—Mechanical (including former activities of the Master Car Builders' Association and the American Railway Master Mechanics' Association)—V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill. Exhibit by Railway Supply Manufacturers' Association.

Equipment Painting Section (including former activities of the Master Car and Locomotive Painters' Association)—V. R. Hawthorne, 431 South Dearborn St., Chicago. Next meeting, Sept. 11-13, Windsor Hotel, Montreal.

Division VI.—Purchases and Stores (including former activities of the Railway Storekeepers' Association)—W. J. Farrell, 30 Vesey St., New York, N. Y.

Division VII.—Freight Claims (including former activities of the Freight Claims Association)—Lewis Pilcher, 431 South Dearborn St., Chicago, Ill. Annual meeting, 1929, Washington, D. C.

Division VIII.—Motor Transport.—George M. Campbell, American Railway Association, 30 Vesey St., N. Y. C.

Car Service Division.—C. A. Buch, 17th and H Sts., N. W., Washington, D. C.

AMERICAN RAILROAD BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W. Ry., 319 N. Waller Ave., Chicago. Annual convention, Oct. 23-25, 1928, Statler Hotel, Boston. Exhibit by Bridge and Building Supply Men's Association.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—R. G. East, Agricultural Agent, Pennsylvania Railroad, Shelbyville, Ind. Semi-annual meeting, December 6-7, 1928, Congress Hotel, Chicago. Annual meeting, May 22-24, 1929, Houston, Tex.

- AMERICAN RAILWAY ENGINEERING ASSOCIATION.—(Works in co-operation with the American Railway Association, Division IV). E. H. Fritch, 431 South Dearborn St., Chicago. Annual convention, March 5-7, 1929, Chicago. Exhibit by National Railway Appliances Association.
- AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—Miss Page Nelson Price, Norfolk & Western Magazine, Roanoke, Va.
- AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C. M. & St. P. Ry., 11402 Calumet Ave., Chicago. Annual convention, Sept. 12-14, 1928, Hotel Sherman, Chicago. Exhibit by Supply Association of the American Railway Tool Foremen's Association.—Secretary: E. H. Lunde, Federal Machinery Sales Co., Chicago.
- AMERICAN SHORT LINE RAILROAD ASSOCIATION.—T. F. Whittelsey, Union Trust Bldg., Washington, D. C.
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York. Railroad Division, Marion B. Richardson, 30 Church St., New York. Machine Shop Practice Division, National meeting, Sept. 24-27, Cincinnati, O.
- AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 228 N. La Salle St., Chicago. Annual meeting, January 22, 1929, Louisville, Ky.
- ASSOCIATION OF RAILWAY CLAIM AGENTS.—H. D. Morris, District Claim Agent, Northern Pacific Ry., St. Paul, Minn. Next meeting, June 19-21, 1929, Detroit, Mich.
- ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucci, C. & N. W., Room 413, C. & N. W. Station, Chicago. Annual convention, Oct. 23-26, Hotel Sherman, Chicago. Exhibit by Railway Electrical Supply Manufacturers' Association.
- ASSOCIATION OF RAILWAY EXECUTIVES.—Stanley J. Strong, 17th and H Sts., N. W., Washington, D. C.
- ASSOCIATION OF RAILWAY SUPPLY MEN.—C. F. Weil, American Brake Shoe & Fdy. Co., 332 So. Michigan Ave., Chicago. Meets with International Railway General Foremen's Association.
- BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—W. D. Waugh, Detroit Graphite Co., St. Louis, Mo. Annual exhibit at convention of American Railway Bridge and Building Association.
- CANADIAN RAILWAY CLUB.—C. R. Crook, 129 Chaffin St., Montreal, Que.
- CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 626 North Pine Ave., Chicago. Regular meetings, 2nd Monday in month, except June, July and August, Gratiot Northern Hotel, Chicago.
- CAR FOREMEN'S ASSOCIATION OF LOS ANGELES.—J. W. Krause, 514 East Eighth St., Los Angeles, Calif. Regular meetings, second Friday of each month, 514 East Eighth St., Los Angeles.
- CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.—A. J. Walsh, 5874 Plymouth, Apt. 18, St. Louis, Mo. Meetings, first Tuesday of each month, except July and August, Broadview Hotel, East St. Louis, Ill.
- CENTRAL RAILWAY CLUB.—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 2nd Thursday each month, except June, July, August, Hotel Statler, Buffalo, N. Y.
- CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.—(See Railway Car Department Officers' Association.)
- CINCINNATI RAILWAY CLUB.—D. R. Boyd, 811 Union Central Bldg., Cincinnati, Ohio. Meetings, 2nd Tuesday in February, May, September and November.
- CLEVELAND RAILWAY CLUB.—F. L. Frericks, 14416 Alder Ave., Cleveland, Ohio. Meetings, first Monday each month, except July, August, September, Hotel Hollenden, Cleveland.
- INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R. Detroit, Mich. Exhibit by International Railroad Master Blacksmith's Supply Men's Association.
- INTERNATIONAL RAILROAD MASTER BLACKSMITHS' SUPPLY MEN'S ASSOCIATION.—W. W. Criley, Ajax Mfg. Co., Cleveland, O.
- INTERNATIONAL RAILWAY FUEL ASSOCIATION.—L. G. Plant, 80 E. Jackson Blvd., Chicago. Next meeting, May 7-10, 1929, Hotel Sherman, Chicago. Exhibit by International Railway Supply Men's Association.
- INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabash Ave., Winona, Minn. Annual convention, September 18-21, 1928, Hotel Sherman, Chicago.
- INTERNATIONAL RAILWAY SUPPLY MEN'S ASSOCIATION.—S. A. Witt, Detroit Lubricator Co., 820 S. Michigan Blvd., Chicago. Meets with International Railway Fuel Association.
- MASTER BOILER MAKER'S ASSOCIATION.—Harry D. Vought, 26 Cortlandt St., New York
- Annual meeting, May 21-24, 1929, Hotel Biltmore, Atlanta, Ga.
- NATIONAL ASSOCIATION OF RAILROAD TIE PRODUCERS.—Roy M. Edmonds, 1252 Syndicate Trust Bldg., St. Louis, Mo.
- NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—James B. Walker, 270 Madison Ave., New York. Annual convention, November 13-16, New Orleans, La.
- NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. W. Kelly, 1014 South Michigan Ave., Chicago. Exhibit at A. R. E. A. convention.
- NATIONAL SAFETY COUNCIL.—Steam Railroad Section: C. F. Larson, supt. of safety, Missouri Pacific, St. Louis, Mo. Annual congress, Oct. 2-4, Waldorf-Astoria, New York.
- NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings 2nd Tuesday in month, excepting June, July, August and September, Copley Plaza Hotel, Boston, Mass.
- NEW YORK RAILROAD CLUB.—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 3rd Friday in month, except June, July, and August.
- PACIFIC RAILWAY CLUB.—W. S. Wollner, 64 Pine St., San Francisco, Cal. Regular meetings 2nd Tuesday in month, alternately in San Francisco and Oakland.
- RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—E. R. Woodson, 1116 Woodward Building, Washington, D. C. Annual meeting, Cleveland, O.
- RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 1406 Packard Bldg., Philadelphia, Pa. Annual meeting, November, 1928, Hotel Commodore, New York.
- RAILWAY CAR DEPARTMENT OFFICERS' ASSOCIATION.—A. S. Sternberg, Belt Ry. of Chicago. Polk and Dearborn Sts., Chicago. Next meeting, Sept. 11-13, Hotel Statler, St. Louis, Mo. Supply Men's Association—B. S. Johnson, W. H. Miner, Inc., 209 S. LaSalle St., Chicago.
- RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 515 Grandview Ave., Pittsburgh, Pa. Regular meetings, 4th Thursday in each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.
- RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—Edward Wray, 9 S. Clinton St., Chicago. Meets with Association of Railway Electrical Engineers.
- RAILWAY EQUIPMENT MANUFACTURERS' ASSOCIATION.—F. W. Venton, Crane Co., 836 S. Michigan Ave., Chicago. Meets with Traveling Engineers' Association.
- RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md. Next convention, Oct. 9-11, 1928, Hotel Gibson, Cincinnati, O.
- RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa. Meets with Mechanical Division and Purchases and Stores Division, American Railway Association.
- RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, 30 Church St., New York. Meets with Telegraph and Telephone Section of A. R. A., Division I.
- RAILWAY TREASURY OFFICERS' ASSOCIATION.—L. W. Cox, 1217 Commercial Trust Bldg., Philadelphia, Pa. Annual meeting, October 11-13, Atlanta-Biltmore Hotel, Atlanta, Ga.
- ROADMASTERS AND MAINTENANCE OF WAY ASSOCIATION.—T. F. Donahue, Gen. Supvr. Road, Baltimore & Ohio, Pittsburgh, Pa. Annual convention, September 18-20, 1928, Book-Cadillac Hotel, Detroit, Mich. Exhibit by Track Supply Association.
- ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings 2nd Friday in month, except June, July and August.
- SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmonds, West Nyack (Rockland Co.), N. Y. Meets with A. R. A. Signal Section.
- SOUTHEASTERN CARMEN'S INTERCHANGE ASSOCIATION.—Clyde Kimball, Inman Shops, Atlanta, Ga. Meets semi-annually.
- SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, P. O. Box 1205, Atlanta, Ga. Regular meetings, 3rd Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta.
- SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—R. G. Parks, A. B. & A. Ry., Atlanta, Ga.
- TRACK SUPPLY ASSOCIATION.—A. H. Todd, Positive Rail Anchor Co., 80 E. Jackson Blvd., Chicago. Meets with Roadmasters' and Maintenance of Way Association.
- TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, Gen. Supt. R. S., New York Central, Buffalo, N. Y. Annual convention, September 25-28, 1928, Hotel Sherman, Chicago. Exhibit by Railway Equipment Manufacturers' Association.
- WESTERN RAILWAY CLUB.—W. J. Dickinson, 189 West Madison St., Chicago. Regular meetings, 3rd Monday each month, except June, July and August.

Traffic

The Associated Traffic Clubs of America will hold their semi-annual meeting at the Palmer House, Chicago, on October 24 and 25.

The Missouri Pacific has established through overnight sleeping car service between St. Louis, Mo., and Arkansas City, Kans., and Conway Springs. Sleeping cars leave St. Louis daily at 6 p.m. and arrive in Arkansas City, Kan., at 10:59 a.m. the next day, and Conway Springs at 12:25 p.m. Returning they leave Conway Springs at 12:50 p.m. and Arkansas City at 2:15 p.m., and arrive in St. Louis at 7:23 a.m. the next day.

The Canadian National and the Canadian Pacific announce that the western farmers now have sufficient numbers of harvesters and that no more special trains will be run to carry these workmen from the east. From eastern Canada and from Great Britain the total estimated number of harvesters carried west this year is about 40,000.

The rail movement of the Northwest's grain crop which began on August 17, will exceed that of 1927, according to estimates made by the railroads serving that territory. The Great Northern and the Northern Pacific expect to carry 240,000,000 bushels this year, as compared with 222,000,000 bushels last year. It is also estimated that other traffic resulting from the 1928 crop will be larger than that from the 1927 crop and that while the early movement will be unusually heavy, this traffic for the first half of 1929 will be as good as it was in the corresponding period of 1928, and probably somewhat larger.

The St. Louis-San Francisco estimates that it will handle 2,357 cars of grapes from the Ozark territory in Missouri and Arkansas this year as compared with 130 cars last year. The car lot movement of apples is expected to total 2,350 as compared with 603 in 1927. The grape shipment began on August 9 and will last until September 15. The heaviest grape movement will come from Springdale, Ark., 900 cars; Fayetteville, 125 cars; Lowell, 100 cars; Johnsons, 100 cars; Bentonville, 75 cars; Exeter, Mo., 125 cars; Republic, 125 cars; Neosho, 100 cars; St. James, 100 cars.

The Missouri Pacific, in an effort to recapture some of the milk traffic taken by motor trucks in the territory south of St. Louis, Mo., has applied to the Missouri Public Service Commission for permission to operate a new daily passenger, mail and express service from St. Louis to De Soto, and intermediate points, and for authority to reduce milk rates to compete with the truck lines. The proposed schedule provides for 8 a. m., arrival at De Soto and a return to St. Louis in time for the 11 a. m., delivery of milk to distributing stations.

The western railroads have petitioned the Interstate Commerce Commission for a postponement of the effective date of its recent order prescribing a revision of freight rates on oranges and grapefruit from Florida and a reopening of the case as to the rates to points in Western Trunk Line territory. The petition says that while the order requires both increases and reductions in existing rates, the basis fixed by the commission requires nothing but reductions to Western Trunk Line territory. Kansas-Missouri and Southwestern lines have also asked for a postponement of the effective date of the order for 90 days or until the effective date of the order as to citrus fruit rates involved in I. & S. Docket No. 3130. It is stated that the decision in the Florida case has the effect of prejudging the question of the level of the rates on citrus fruits from producing territory in the Southwest.

Hoch-Smith Investigation

Hearings before representatives of the Interstate Commerce Commission in the investigation of freight rates on grain and grain products west of the Mississippi river, as authorized by the Hoch-Smith Resolution, were resumed at Los Angeles, Cal., on August 16. Hearings were started in Dallas nearly a year ago, following which testimony has been taken at various places throughout the country, sessions being held recently in Seattle, Wash., and Portland, Ore. At the conclusion of the Los Angeles testimony, which is likely to occupy several weeks, time will be allowed interested parties to prepare briefs. The first briefs of the carriers and shippers will be filed before November 1 and these will be followed by rebuttal briefs which will be due in the latter part of December. This procedure will be followed by oral arguments before the commission.

Schedules to Florida Improved

Passenger service between Chicago and points in Florida has been improved by the shortening of schedules on two roads.

The Chicago & Eastern Illinois has shortened the schedule of its Dixie Limited between Chicago and Jacksonville, Fla., 2 hr. and 10 min., and that of its Dixie Flyer 30 min. The Dixie Limited now leaves Chicago at 2:00 p. m., instead of 12:05 p. m., and arrives in Jacksonville at 8:45 p. m. the next day instead of 9:00 p. m. Returning it leaves Jacksonville at 8:30 a. m. instead of 8:55 a. m. and arrives in Chicago at 2:35 p. m. instead of 4:10 the next afternoon. The Dixie Flyer leaves Chicago at 10:30 p. m. instead of 10:00 p. m.

The Illinois Central will shorten the schedule of the Floridan, its winter train between Chicago and Miami, Fla., 1 hour and 35 minutes when it is re-installed in December. Under the new schedule the train will leave Chicago at 2:45 p. m. instead of 12:50 p. m. and will arrive at Miami at 8:00 a. m. instead of 7:40 a. m. Returning it will leave Miami at 9:30 p. m. instead of 9:15 p. m. and will arrive in Chicago 2:55 p. m. instead of 3:50 p. m.

Equipment and Supplies

Locomotives

LONG ISLAND.—See Pennsylvania.

THE GREAT NORTHERN is inquiring for 10 Mallet type locomotives.

THE BELT RAILWAY OF CHICAGO is inquiring for 10 eight-wheel switching locomotives.

THE PENNSYLVANIA is building at its Altoona shops ten G-5, 4-6-0 type passenger locomotives, for local service on the Long Island. The work is expected to be completed in September or October.

THE TEXAS COMPANY has ordered one six-wheel switching locomotive from Baldwin Locomotive Works.

THE SOLVAY PROCESS COMPANY, Syracuse, N. Y., has ordered 2, 0-4-0 tank locomotives, from the American Locomotive Company. These locomotives will have 13 by 20 in. cylinders and a total weight in working order of 65,000 lb.

THE NEW YORK CENTRAL has ordered 55 locomotives and 5 additional 15,000 gal. locomotive tenders from the American Locomotive Company, to cost about \$5,400,000. Of these 30 will be of the Hudson type for passenger service and 25 Mohawk heavy type for freight service. These are for service as follows: New York Central, 25 passenger locomotives; Michigan Central, 5 passenger locomotives, and Cleveland, Cincinnati, Chicago & St. Louis, 25 freight locomotives. The Hudson type locomotives will have 25 by 28 in. cylinders and a total weight in working order of 350,000 lb.; the Mohawk type will have 27 by 30 in. cylinders and a total weight in working order of 363,000 lb.

Passenger Cars

THE CHESAPEAKE & OHIO is inquiring for 2 steel dining cars.

THE CENTRAL OF GEORGIA has ordered one combination passenger and baggage, Model 55, gasoline rail motor car, from the J. G. Brill Company.

THE SOUTHERN PACIFIC contemplates buying about 25 dining cars.

Machinery and Tools

THE INTERNATIONAL-GREAT NORTHERN has ordered one Columbia 24-in. shaper, and one Nazel self contained hammer, from Manning, Maxwell & Moore, Inc.

THE WABASH has ordered one Micro Machine Company's heavy duty internal railroad grinder, and one W. F. & John Barnes' 34-in. and one 42-in. drill, from Manning, Maxwell & Moore, Inc.

THE MISSOURI-KANSAS-TEXAS has ordered two Putnam combination car axle journal and axle lathes, and one Warner & Swasey No. 1-A hollow hexagon turret lathe, with bar and chucking equipment, from Manning, Maxwell & Moore, Inc.

Iron and Steel

THE GREAT NORTHERN is inquiring for 2,000 tons of rails.

THE CHESAPEAKE & OHIO is inquiring for 45,000 tons of rails.

THE CHICAGO, BURLINGTON & QUINCY has ordered 5,200 tons of rails from the Colorado Fuel & Iron Company.

THE NEW YORK CENTRAL is inquiring for 500 tons of steel for bridges at Cleveland, Ohio.

THE READING COMPANY has ordered 500 tons of steel for bridges at Port Reading, N. J., from the Bethlehem Steel Company.

THE ERIE has ordered 200 tons of steel for use at Rutherford, N. J., from the Phoenix Bridge Company.

THE MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE has divided orders for 5,200 tons of rails between the Inland Steel Company, the Bethlehem Steel Company and the Illinois Steel Company.

Signaling

THE MISSOURI-KANSAS-TEXAS has ordered from the Union Switch & Signal Company material for automatic block signals to be installed between Fort Worth, Tex., and Alvarado, 27 miles, single track. Color-light signals, style R, will be used.

Car Retarders for Syracuse

The New York Central has ordered from the General Railway Signal Company materials for the installation of G-R-S electric car retarders in its freight yards at DeWitt (Syracuse) N. Y., both eastbound and westbound. The order includes 49 retarders, 38 ft. 6 in. long; 67 skate machines, 69 switch machines, and other items; including necessary material for track circuits through the switches. This installation will, in general, be like the retarder system of the same type now in use on the New York Central at Selkirk, N. Y.

A FREIGHT RATE AGREEMENT has been concluded between representatives of the German North sea ports, representatives of the Adriatic seaports and delegates from interested railways of Austria, Czechoslovakia, Italy, Hungary and Yugoslavia, according to advices from Berlin, made public by the Department of Commerce. The agreement, which will remain in force for two years, followed upon a series of rate reductions and retaliations in the competition between North sea and Adriatic ports for traffic from the interior. Under the terms of the accord a "uniform freight line" has been drawn through Czechoslovakia, north of which shipments will be routed to German seaports and south of which tonnage will move to Adriatic ports. Freight rate parity is also established for the greater part of Austria.

Supply Trade

C. R. Ahrens has been appointed eastern sales manager of the **Chicago Railway Signal & Supply Company**, with headquarters at 30 Church street, New York.

Charles J. Authur, formerly sales engineer of the A. R. Amos, Jr. Company, Philadelphia, Pa., has been appointed representative of the **Wagner Electric Corporation**, St. Louis, Mo., with headquarters in Philadelphia.

The **Ames Shovel & Tool Company** with general office since 1901 at Boston, Mass., on August 10 moved its office to its factory at North Easton, Mass. The company was recently reorganized; Oliver Ames remains as vice-president, and the new executives are as follows: William A. Ready, president; Norbert T. Jacobs, general sales manager; Albert H. Daggett, treasurer; and Victor D. Vickery, secretary.

The **Paige & Jones Chemical Company** of New York City and Hammond, Ind., has purchased from the **American Water Softener Company**, Philadelphia, patent rights and good-will pertaining to the lime soda water softening business of that company, and will hereafter manufacture and sell this type of lime soda water softeners. W. T. Runcie, formerly sales manager and H. C. Waugh, engineer of the American Company have joined the organization of the Paige & Jones Chemical Company.

Howard F. Kulas, secretary and in charge of production and manufacturing of the **Midland Steel Products Company**, Cleveland, Ohio, has been appointed vice-president in charge of sales. J. E. Maloney, sales manager of the Cleveland division, has been appointed general sales manager succeeding W. G. Langdon, who has resigned to become director of sales of the automotive parts division of the Cincinnati Ball Crank Company, Cincinnati, Ohio.

L. S. Walker has been appointed eastern manager of **The P. & M. Company** with headquarters at New York, to succeed F. N. Baylis. Mr. Walker was born on November 21, 1888, at Woodstock, Va. He attended Virginia Polytechnic Institute, and was graduated with a degree of civil engineer in 1910. Previous to this, during the summer of 1907-1908, he served in the construction department of the Illinois Central, engaged in the building of the Baton Rouge, Hammond & Eastern. During 1910-1911 he took a special course at Lehigh University and the following year entered the service of the Chesapeake & Ohio. Later he served in the maintenance department of the Illinois Central as instrument man, and in 1913 went to the P. & M. Company in its production department. In May, 1914, he entered the service and sales

department, eastern territory, at the New York office, and in 1918 was appointed eastern sales agent of the same



L. S. Walker

company, becoming eastern sales manager in 1926, which position he held at the time of his recent appointment as eastern manager of the same company.

Max K. Ruppert has been appointed assistant eastern manager of **The P. & M. Company** with headquarters at New York. Mr. Ruppert was born on June 5, 1899, at Grand Rapids, Mich. He was graduated from the New Mexico Mili-



Max K. Ruppert

tary Institute at Roswell, N. M., in 1918, and later served until the following year as instructor at that institute. In 1919 he entered the service of the Chicago, Rock Island & Pacific as chainman in the engineering department, subsequently serving as rodman, instrument man, ballast inspector and rail inspector. In 1922 he entered the service of the P. & M. Company. He was in the production department until 1923 and from then until 1928 was a representative in the sales department, at Chicago, and now becomes assistant eastern manager of the same company, with headquarters at New York.

Obituary

James Bowron, chairman of the board of directors of the Gulf States

Steel Corporation, died at Birmingham, Ala., on August 25, from heart trouble.

Joseph E. Brown, who has been elected vice-president of the **Central Valve Manufacturing Company**, with headquarters in the Railway Exchange building, Chicago, was born in New York on December 6, 1886, and after graduating from high school, entered the purchasing department of the Erie. In 1910 he became western railroad manager of the Standard Paint Company, now the Ruberoid Company. In 1918 he entered the employ of the O'Malley



Joseph E. Brown

Beare Valve Company, now the Central Valve Manufacturing Company, as eastern sales manager, with headquarters at New York, which position he has held until his recent election.

Blue Prints Transmitted by Wire

The air mail is a fast method of transmitting papers which cannot be entrusted to the telegraph, but not always quite fast enough; and a saving of six hours in workshop time and 24 hours or more in delivery time was reported recently by Joseph T. Ryerson & Son, by using the telegraph for sending an order, including a blue print from St. Louis to Chicago. This made a material saving of time in the delivery of ten tons of steel.

An order from Tulsa, Okla., for steel bars, ties and wire to be delivered in La Rose, Ill., was sent from Tulsa to St. Louis by fast mail; was found at St. Louis to be of a character necessary to repeat to Chicago, and was then telephotographed, with the drawing, to the latter city.

Copies were sent to the shop with orders to pay bonuses for both shearing and banding; and by doubling the crews of workmen, the job was finished in one hour and 25 minutes. The traffic department put in a special order for a car, and by the coöperation of the Pennsylvania and the Santa Fe, had the shipment started from Chicago that night; and it was delivered in La Rose, 116 miles from Chicago, at 4:20 the next morning.

The blue print was about 7 in. by 9 in. and in addition to the figures and shop marks, it also contained four simple diagrams.

Construction

ATLANTIC COAST LINE.—The Interstate Commerce Commission has authorized this company to build an 8.4-mile extension southeasterly from Clewiston, Fla.; estimated cost, \$172,785.

CINCINNATI, NEW ORLEANS & TEXAS PACIFIC.—A contract for the construction of a second main track between Lexington, Ky., and the Kentucky river, about 22 miles, has been let to the Bates & Rogers Construction Co., Chicago. A contract for the construction of a second main track between the Kentucky river and Danville, Ky., about 13 miles, has been let to the Brooks-Calloway Company, Atlanta, Ga.

CLEVELAND UNION TERMINALS.—This company has awarded a contract to the Lundorf-Bicknell Company, Chicago, for the erection of a building to be known as the Medical Arts Building in the new terminal development at Cleveland.

DENVER & SALT LAKE WESTERN.—The Public Utilities Commission of Colorado has agreed to hold a hearing for the Interstate Commerce Commission at Denver, Colo., on September 18 on the application of this company for permission to construct the Dotsero cut-off between Dotsero, Colo., and Orestod, about 40 miles.

DENVER & SALT LAKE WESTERN.—The Interstate Commerce Commission has asked the Public Utilities Commission of Colorado whether it can hold a hearing for it on September 17 at Denver on the application of this company, a subsidiary of the Denver & Salt Lake, for a certificate authorizing the construction of an extension from Orestod, on its line, to Dotsero, on the line of the Denver & Rio Grande Western, in Colorado, 41 miles, which would enable the utilization of the Moffat tunnel as part of a through route which would reduce the mileage between Denver and Salt Lake City by 173 miles as compared with that of the D. & R. G. W. The application was filed in December, 1924, but at the request of the company it was held in abeyance. Recently W. R. Freeman, president of the D. & S. L. telegraphed the commission requesting that if a hearing was necessary it be held on September 17.

GRAYSONIA, NASHVILLE & ASHDOWN.—A contract for the construction of five miles of branch line in the vicinity of Saratoga, Ark., has been let to the Horton-Price Construction Company, Texarkana, Ark.

GREAT NORTHERN.—A contract has been let to the Railway Engineering Equipment Company, Chicago, for a direct steaming system for installation in a 24-stall enginehouse at Interbay (Seattle) Wash. This system will be installed without smoke jacks or a heating system. Installation of the direct steaming equipment to-

gether with hot water washing and filling system will be made by the F. W. Miller Heating Company, Chicago.

NEW YORK CENTRAL.—This road has awarded a contract to James Stewart & Co., New York, for the construction of an underground passage-way between its office building on Lexington avenue, New York, and Grand Central Terminal. The work is expected to cost approximately \$125,000.

NEW YORK CENTRAL.—This road plans a \$2,500,000 expenditure for improvements to its Mott Haven yards, New York, the project being in connection with the provision of additional facilities for handling passenger equipment. Bids are now being sought for the initial work, involving the construction of a retaining wall and a new milk platform and driveways with access from Park avenue by means of a new bridge and viaduct across the Harlem division tracks. Plans also call for the construction of a five-story building to house yard forces of the Pullman Company and the road's commissary department. New trackage arrangements will also be installed to facilitate operation between Mott Haven and Grand Central terminal.

NEW YORK, NEW HAVEN & HARTFORD.—This road has awarded a contract to the Turner Construction Company, Boston, Mass., for the erection of a warehouse to be used by the Providence Produce Warehouse Company at Providence, R. I. The building will be 965 ft. by 60 ft. with a two-story portion at one end. Approximately \$500,000 is involved in the contract.

PENNSYLVANIA.—A contract for the construction of a produce terminal at Fort Wayne, Ind., at a total cost of about \$300,000 has been let to the Buesching & Hagerman Co., Fort Wayne.

PITTSBURGH & WEST VIRGINIA.—A contract has been awarded to Winston Brothers, Minneapolis, Minn., for the construction of an extension of its line from Cochran's Mill, Pa., to Connellsville, about 38 miles. The total cost of the project is estimated at \$12,800,000.

SOUTHERN PACIFIC.—The Interstate Commerce Commission has authorized this company to build a new line and a bridge across Suisun Bay, near San Francisco, Calif., subject to approval of the Secretary of War, and to abandon car ferry service across the Strait of Carquinez. The project is estimated to cost \$11,548,500.

SURRY, SUSSEX & SOUTHAMPTON.—This company has applied to the Interstate Commerce Commission for a certificate authorizing the construction of extensions of its line from Sedley to Franklin and from Franklin to Dendron, Va. The company now operates a narrow-gauge line from Scotland to Dory, Va., 29 miles, and from Dory to Sedley, 6.2 miles. It proposes to convert its line from narrow gauge to standard gauge and otherwise rehabilitate it. The proposed line will connect at Hopewell, Va., with the proposed extension of the Seaboard Air Line.

Financial

ATLANTIC COAST LINE.—Extension.—The Interstate Commerce Commission has authorized this company to extend its line from Clewiston, Fla., southeasterly 8.4 miles to a point on the west bank of the Miami canal; estimated cost, \$172,785.

BOSTON & MAINE.—Stock Sale to Employees.—This company has offered to its employees shares of its 7 per cent cumulative prior preference stock to be acquired by monthly payments, under a plan developed by the directors. The stock, quoted recently on the Boston Stock Exchange at about \$110, is offered to employees at \$103. Payments, which are to be completed in from 14 to 23 months, will earn 7 per cent interest from dates of payment. This interest will be credited on the purchase price. Dividends on the prior preference stock, issued in the financial reorganization of the Boston & Maine, in which stockholders made available \$13,000,000 for improvements, must be paid in full before dividends can be paid on any other class of stock—first preferred, preferred or common. Prior preference stock is redeemable by the railroad after January 1, 1930, at \$110 a share and accumulated dividends. Each employee may subscribe to one share for each \$500 of his annual salary.

CHICAGO, TERRE HAUTE & SOUTHEASTERN.—Bonds.—This company has applied to the Interstate Commerce Commission for authority for an issue of \$951,000 of first and refunding mortgage 50-year 5 per cent bonds, for the purpose of reimbursing the Chicago, Milwaukee, St. Paul & Pacific for expenditures.

DETROIT, TOLEDO & IRONTON.—Bonds.—The Interstate Commerce Commission has authorized this company to issue \$660,000 of first mortgage, fifty-year, 5 per cent bonds to be delivered at par to Henry Ford in payment for advances for construction purposes made by him on open account.

NEW YORK, CHICAGO & ST. LOUIS.—Bonds.—This company has applied to the Interstate Commerce Commission for authority for the authentication and delivery of \$11,275,000 of refunding mortgage bonds at 4½ per cent, to reimburse the treasury for expenditures from income not yet capitalized.

NEW YORK, NEW HAVEN & HARTFORD.—Dividend.—The directors of this company have declared a dividend of \$1 on the common stock of the company. This is the second dividend in this sum declared this year and, as in the case of the first dividend, no announcement is made as to its regularity in future.

NEW YORK, NEW HAVEN & HARTFORD.—Old Colony Stock.—The Interstate Commerce Commission has authorized the Old Colony, lessor to the New Haven, to issue \$927,400 of stock to be delivered

to the New Haven in partial payment for permanent improvements.

PENNSYLVANIA. — Abandonment.—The Interstate Commerce Commission has authorized the Pennsylvania, Ohio & Detroit and its lessee, the Pennsylvania, to abandon the Strasburg branch, extending from Strasburg, O., to Harwalk, 1.5 miles.

SEABOARD AIR LINE.—Control of Tampa & Gulf Coast.—The Interstate Commerce Commission has authorized the alteration of the lease of the latter company by the Seaboard along the same lines as in the case of the lease of the Tampa Northern, outlined in another item herewith.

SEABOARD AIR LINE.—Control of Tampa Northern.—The Interstate Commerce Commission has authorized the amendment of the lease by which the Seaboard controls the Tampa Northern to extend the time of notice of cancellation from 60 days to 90 days, to change the clause governing rental to be paid to exclude payment on indebtedness currently held and not pledged under mortgage unless in default, to eliminate responsibility of the lessee for the lessor's federal stock tax, and other minor changes. The lease is changed to conform with those of other Seaboard subsidiaries and to avoid accounting complexities.

SOUTHERN PACIFIC.—Construction Authorized.—The Interstate Commerce Commission has authorized this company to construct a 6.1-mile line from Martinez, Calif., east and north to a connection at Goodyear. The new line involves a bridge across Suisun bay and the abandonment of car ferry service upon which the road has previously depended to provide through train service east from San Francisco. The estimated cost of the work is \$11,548,500.

TOLEDO TERMINAL.—Bonds.—The Interstate Commerce Commission has authorized this company to sell at not less than 95 a total of \$259,000 of its 4½ per cent first mortgage bonds. These bonds are now held in its treasury and sale will be in reimbursement of capital expenditures.

Average Prices of Stocks and of Bonds

	Aug. 28	Last week	Last year
Average price of 20 representative railway stocks..	121.78	120.93	118.18
Average price of 20 representative railway bonds..	92.93	92.33	94.99

Valuation Reports

The Interstate Commerce Commission has issued final valuation reports finding the final value for rate-making purposes of the property owned and used for common-carrier purposes, as of the respective valuation dates, as follows:

Rio Grande Southern	\$3,322,800	1919
Georgia & Florida	4,710,000	1918

Dividends Declared

Hocking Valley.—\$2.50, quarterly, payable September 29 to holders of record September 8.
New York, New Haven & Hartford.—Common, \$1.00, payable October 10 to holders of record September 10; preferred, \$1.75, quarterly, payable October 1 to holders of record September 10.
St. Joseph, South Bend & Southern.—Common, ¾ per cent; preferred, 2½ per cent; both payable September 15.

Officers

Executive

P. J. Neff, general superintendent of the Eastern district of the Missouri Pacific, with headquarters at St. Louis, Mo., has been promoted to assistant to the president, with headquarters in the same city. Mr. Neff, whose promotion is effective on September 1, will be assigned special duties in connection with transportation matters.

William S. McAbee, who has been elected vice-president of the Union Railroad, with headquarters at East Pittsburgh, Pa., was born on October 23, 1886, at Prospect, Md. He attended the public schools and Iron City Business College at Pittsburgh, and entered railway service on May 23, 1900, with the Baltimore & Ohio. He served this railroad in various clerical capacities until June 1,



William S. McAbee

1909, on which date he entered the service of the Union Railroad as chief clerk to the general yardmaster. He later served in a similar capacity to the assistant superintendent and superintendent. Mr. McAbee was appointed general yardmaster on March 1, 1918, and superintendent on March 1, 1924. He was appointed general superintendent on December 1, 1925, which position he was holding at the time of his recent election as vice-president. Mr. McAbee will continue to serve as general superintendent.

Financial, Legal and Accounting

W. M. Holden, assistant secretary of the Colorado & Southern, with headquarters at Denver, Colo., has been appointed acting treasurer, with headquarters at the same point. Mr. Holden temporarily succeeds **B. F. James**, deceased, who was secretary and treasurer.

William H. Luckett, who has been appointed assistant general auditor on

the Southern, with headquarters at Washington, D. C., was born on April 3, 1884, at Alexandria, Va. He entered railway service in August, 1899, as a messenger for the Southern, serving in that position until March, 1900, at which time he was appointed clerk. He was appointed chief clerk in July, 1913, and in August, 1918, he was promoted to the position of assistant



Harris & Ewing
William H. Luckett

auditor. He served in that capacity until July 23, 1928, when he was appointed assistant general auditor.

L. D. McPherson has resigned as valuation attorney of the Wabash, with headquarters at St. Louis, Mo., on September 1 to engage in the general practice of law at Chicago. Mr. McPherson has been engaged in the preparation and presentation of the valuation of the Wabash to the Interstate Commerce Commission since 1924 and prior to that time he was successively, from 1901, associated with the Southern, the Bureau of Valuation of the Commission, the Chicago, Milwaukee, St. Paul & Pacific, the Detroit & Toledo Shore Line, the Toledo, St. Louis & Western (now part of the New York, Chicago & St. Louis) and the Pere Marquette in legal and valuation work.

Julius W. Bourscheidt, who has been promoted to auditor of the St. Louis Southwestern, with headquarters at St. Louis, Mo., has been in the service of that railroad since 1921. He was born on July 6, 1884, at St. Louis and after attending grade and high school in that city he entered railway service at the age of 18 years in the accounting department of the Missouri Pacific. In August, 1904, Mr. Bourscheidt became a clerk in the accounting department of the Wabash where he remained until July, 1915, when he was advanced to special accountant. From September 1, 1918, to January 1, 1919, he acted as special accountant on the Pere Marquette then being appointed chief clerk to the vice-president and comptroller of the Wabash. He entered the Cotton Belt service on October 1, 1921, as special accountant at St. Louis, being advanced to chief clerk in the disbursement department on October 1, 1926. Mr. Bourscheidt's promotion to auditor became effective on July 16.

Operating

C. A. Bache, assistant to the vice-president and general manager of the Beaver, Meade & Englewood, with headquarters at Oklahoma City, Okla., has been promoted to assistant general manager and traffic manager, with headquarters at the same point.

C. C. Blanc, superintendent of terminals of the Atlantic Coast Line, with headquarters at Jacksonville, Fla., has been appointed superintendent of the Ridge district, with headquarters at Lakeland, Fla., succeeding **W. H. Newell, Jr.**, who has resigned to accept service elsewhere. **C. L. Burpee** has been appointed superintendent of terminals at Jacksonville, succeeding Mr. Blanc. The positions of terminal trainmaster at Jacksonville and at Lakeland have been abolished.

G. A. Bays has been appointed trainmaster of the Tucson division of the Southern Pacific, with headquarters at Yuma, Ariz., succeeding **J. M. Trefren**, who has been transferred to the Rio Grande division, with headquarters at Lordsburg, N. M. Mr. Trefren replaces **C. L. Zwick**, who has been transferred to the Los Angeles division, with headquarters at Colton, Cal., who in turn succeeds **H. R. Hughes**, who has been transferred to the Coast division, with headquarters at Watsonville Junction, Cal. The headquarters of **L. P. Hopkins**, trainmaster at Watsonville Junction, have been removed to San Francisco, Cal., where he replaces **A. A. Lowe**, who has been assigned to other duties.

John W. Rea, superintendent of the Eastern division of the Missouri Pacific, with headquarters at Jefferson City, Mo., has been promoted to general superintendent of the Eastern district, with headquarters at St. Louis, Mo., succeeding **P. J. Neff**, who has been promoted to assistant to the president. **C. J. Brown**, superintendent of the Omaha division, with headquarters at Falls City, Neb., has been transferred to the Eastern division to replace Mr. Rea. Mr. Brown has been succeeded on the Omaha division by **J. Davis**, assistant superintendent of the Arkansas division, with headquarters at Little Rock, Ark. **W. P. Hayes**, superintendent of the Little Rock division, with headquarters at McGehee, Ark., has been transferred to the Joplin division, with headquarters at Nevada, Mo., succeeding **C. H. Dunaway**, who has been appointed trainmaster at Monroe, La. **C. F. Dougherty**, trainmaster at Monroe, has been promoted to assistant superintendent at El Dorado, Ark., replacing **H. E. Roll**, who has been promoted to superintendent of the Little Rock division to succeed Mr. Hayes. **W. Wicker**, trainmaster in charge of terminals at Little Rock, has been promoted to assistant superintendent at that point to succeed Mr. Davis. **J. M. Umshler**, terminal trainmaster on the Illinois Central at East St. Louis, Ill., has been appointed terminal train-

master at Little Rock succeeding Mr. Wicker. All of these appointments were effective on September 1.

John W. Rea, who has been promoted to general superintendent of the Eastern district of the Missouri Pacific, with headquarters at St. Louis, Mo., has been in the service of that railroad for about five years. He was born on April 9, 1879, at Wesson, Miss., and entered railway service in January, 1905, as a brakeman on the Illinois Central. In the next year he became a conductor on the Yazoo & Mississippi Valley and in October, 1907, he was advanced to engine foreman and yardmaster. Mr. Rea served from September, 1911, to November, 1915, as a freight conductor



John W. Rea

on the Illinois Central and he was then promoted to trainmaster on the Memphis division where he remained until November, 1923, when he was appointed inspector of transportation on the Missouri Pacific at St. Louis. He was appointed acting superintendent of the Eastern division, with headquarters at Jefferson City, Mo., in January, 1924, and in May of the same year he was promoted to superintendent of the same division. Mr. Rea's promotion to general superintendent of the Eastern district became effective on September 1.

Traffic

A. W. Billington has been appointed general agent of the Peoria & Pekin Union at Detroit, Mich.

H. T. Rickerson, general agent, freight department, of the New York Central Lines, with headquarters at New Orleans, La., has been appointed general agent on the Michigan Central, with headquarters at Toledo, O., succeeding **W. T. Stupp**, who is on leave of absence. Mr. Rickerson will be succeeded at New Orleans by **S. D. Powers**.

F. A. Reid, acting treasurer and general freight and passenger agent of the Chicago, Springfield & St. Louis and the Jacksonville & Havana, with headquarters at Springfield, Ill., has been promoted to traffic manager of the two railroads, with headquarters at the same

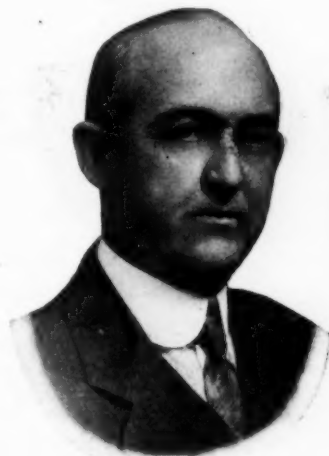
point. He succeeds **A. W. Morse**, who resigned on September 1.

Engineering, Maintenance of Way and Signaling

J. S. Bassett, master of trains and track on the Little Rock division of the Missouri Pacific, with headquarters at McGehee, Ark., has been appointed division engineer, with headquarters at the same point.

Henry F. Brown, who has been promoted to district engineer of the Northern Pacific lines east of Mandan, N. D., with headquarters at St. Paul, Minn., has been in the service of that railway for 22 years. He was born in New York on April 6, 1884, and graduated from the Sheffield Scientific School of Yale University in 1905. In September of the following year Mr. Brown entered railway service as an instrumentman on the Northern Pacific. He was promoted to resident engineer on construction in April, 1907, and until January, 1910, he acted in that capacity and as district engineer in Washington and Montana. Mr. Brown was then promoted to assistant engineer and later to assistant district engineer of maintenance of way, his promotion to district engineer becoming effective on August 20.

A. C. Terrell, who has been promoted to valuation engineer of the Northern Pacific, with headquarters at St. Paul, Minn., has been in the service of that railroad for more than 22 years. He was born at Macon, Mo., in 1876 and was graduated from Cornell University in 1900. In the same year Mr. Terrell entered railway service as a rod-



A. C. Terrell

man on the Chicago, Burlington & Quincy. Later he was advanced to instrumentman and in September, 1901, he became resident engineer on the St. Louis-San Francisco. From September, 1904, to March, 1906, Mr. Terrell acted as division engineer and as resident engineer on the Chicago, Rock Island & Pacific, then becoming resident engineer on the Northern Pacific. Subsequently he occupied the positions of assistant

engineer of maintenance, division engineer of maintenance, and assistant engineer on various construction projects. Mr. Terrell was appointed division engineer in the valuation department in 1916. His promotion from that position to valuation engineer became effective on August 20.

P. E. Thian, who has been promoted to consulting engineer of the Northern Pacific and the Northwestern Improvement Company, with headquarters at St. Paul, Minn., has been connected with the engineering department of that railroad for 22 years. He was born at Washington, D. C., on July 13, 1862, and was graduated over Georgetown University. He entered railway service in 1881 as a chainman on the Denver & Rio Grande Western in Utah. Mr. Thian served with the D. & R. G. W. until 1882 and for the next 23 years he was successively a topographer for the Canadian Pacific on location and construction west of Calgary, Alta., and in Kicking Horse Pass, B. C., in mining work in the Canadian Northwest, an assistant engineer on the construction of the Chicago, Milwaukee, St. Paul & Pacific bridge over the Missouri River at Kansas City, Mo., and on bridge surveys, a locating and construction engineer on the Northern Pacific in Washington, city engineer of Everett, Wash., on the construction of the Arkansas



P. E. Thian

Pass jetty works in Texas, on government land surveys, United States deputy land surveyor, assistant chief engineer of the Kootenai Valley railroad in Idaho, locating engineer for the Algoma Central (now the Algoma Central & Hudson Bay), in mining work in Mexico, on the construction of the League Island dry dock at Philadelphia, Pa., and locating engineer for the Great Northern. In 1905, Mr. Thian was appointed chief engineer of the Brandon, Saskatchewan & Hudson's Bay, the Midland of Manitoba and the Crow's Nest Southern (all now parts of the Great Northern), becoming an assistant engineer on the Northern Pacific on location and construction in North Dakota and Montana in 1908. He was promoted to valuation engineer, with headquarters at St. Paul,

in 1913. Mr. Thian's promotion to consulting engineer became effective on August 20.

Mechanical

Harry A. Currie, who has been appointed electrical engineer of the New York Central, was born in Halifax, Nova Scotia, and there received his early education. For a period of three years he served as sailor and mate on sailing vessels. He first engaged in railway work with the Brooklyn Rapid Transit Company with which company he was a power plant operator and developed methods for testing electric rolling stock. He acquired his technical education at Cooper Union in New York, attending school at night and working days. On June 1, 1903, he entered the service of the New York Cen-



Harry A. Currie

tral as assistant engineer in charge of the installation of an experimental electrified section of track at Schenectady, N. Y. He superintended the testing of experimental locomotives and also of the original 35 locomotives used on the electrified New York Terminal of the New York Central. In 1906 he was transferred to New York, taking charge of the erection of transmission lines and the installation of third rail and track bonding. He was appointed assistant electrical engineer in 1907. In 1910 after the death of J. D. Keiley, electrical engineer, Mr. Currie succeeded to the duties formerly assumed by Mr. Keiley. He retained the title of assistant electrical engineer until his present appointment as electrical engineer and has now assumed the duties heretofore performed by the chief engineer of electric traction, this latter position having been abolished.

Special

Dr. Clay Johnson has been appointed chief surgeon of the Fort Worth & Denver City and the Wichita Valley, with headquarters at Fort Worth, Tex.

Pitt P. Hand, formerly manager of public relations of the New York Central, with headquarters at New York, has been appointed to a similar position with the Richfield Oil Com-

pany of California, with headquarters at Los Angeles.

Obituary

Budd Frank James, secretary and treasurer of the Colorado & Southern, with headquarters at Denver, Colo., died at his home in that city on August 21, following a paralytic stroke he suffered in July. Mr. James was born on September 8, 1859, at Lafayette, Ind., and entered railway service in April, 1880, as a clerk on the Lake Shore & Michigan Southern (now a part of the New York Central). Later in the same year he became a clerk on the Cleveland, Cincinnati, Chicago & St. Louis and for the following 18 years he served in that position and as cashier for the Big Four, as accountant on the Wabash, as clerk and soliciting freight agent on the Big Four, as clerk and bookkeeper on the Denver, Texas & Fort Worth (now part of the Colorado & Southern), as clerk on the Denver & Rio Grande and as cashier on the Union Pacific, Denver & Gulf (now part of the Colorado & Southern). In January, 1899, Mr. James became a cashier on the Colorado & Southern and was promoted to assistant secretary and assistant treasurer, with headquarters at Denver, in 1904. He was promoted to secretary and treasurer in 1909. During federal control of the railroads he served as federal treasurer of the Colorado & Southern and the Denver & Salt Lake.

A NEW DE LUXE TRAIN, called the "Rheingold Express," the passenger cars of which are some of the most luxurious in use in Germany, has been put into service by the German Federal Railway Company in conjunction with the Mitropa Company (i.e. the German Sleeping Car Company). The route of the new train follows the course of the Rhine, from Hook of Holland to Basel and Lucerne, serving the German cities of Dusseldorf, Cologne, Coblenz, Mainz, Mannheim, Karlsruhe, Baden-Baden and Freiburg.

The cars are of all-steel construction with bodies painted dark blue as high as the windows, and the upper part done in ivory with lettering in gold. The baggage car is finished in dark blue enamel.

The train carries two diners, one for first class passengers and one for second class, served by a central kitchen in the first class diner. The first class diner seats 29 passengers and the second class 43. Both are furnished with overstuffed parlor car seats.

The interior of both the first and second class passenger cars is constructed with a roomy aisle running through the center of the car, with two seats on one side of the aisle and one seat on the other. These seats are upholstered in grey and pale blue, are moveable and arranged in settings around tables, with places for two or four persons. Each passenger car has both smoking and non-smoking compartments, separate compartments for baggage and wardrobes, and a service room for the attendants, as well as toilets of the most recent design.